The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 29. NO. 10. TULSA, OKLAHOMA, JULY 24, 1930

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Petroleum Outlook Is More Promising

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Every Threatening Area Now Under Control. Future Prosperity Depends on Continuance of Present Policy

By Andrew M. Rowley

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

Probably at no other period during the present year has the situation affecting all branches of the petroleum industry appeared as promising as it does at this time. In every area in the United States which constituted an overproduction threat co-operation among the operators and with state authorities has resulted in a conservation plan being made effective which assures an orderly and conservative development of the field. The Hobbs Pool in New Mexico, which with intensive development probably could have produced nearly 500,000 barrels daily within a comparatively short time, is the latest area to enter the conservation ranks and all indications now point to a sane and economical development of that pool.

Texas, which has produced far in excess of its nominated quota, is working out its problems and it seems now as if the State Railroad Commission will issue orders to further restrict production, probably as a result of a meeting scheduled for July 30. Several of the newer fields in Southwest Texas are believed to be at or near the peak of their production, water encroachment being probable if the present output is increased. The situation in California looks much better for all branches of the industry. Eastern operators are doing their part in holding crude oil production more nearly to requirements. The Oklahoma Corporation Commission has approved the recommendations of operators that production be reduced further, bringing it down to 550,000 barrels daily until September 1.

Daily average crude oil production in the United States last week averaged 405,000 barrels less than during the similar week last year. Crude runs to stills are less now than they were a year ago, due to co-operation of the refiners. Gasoline and crude oil are being withdrawn from storage.

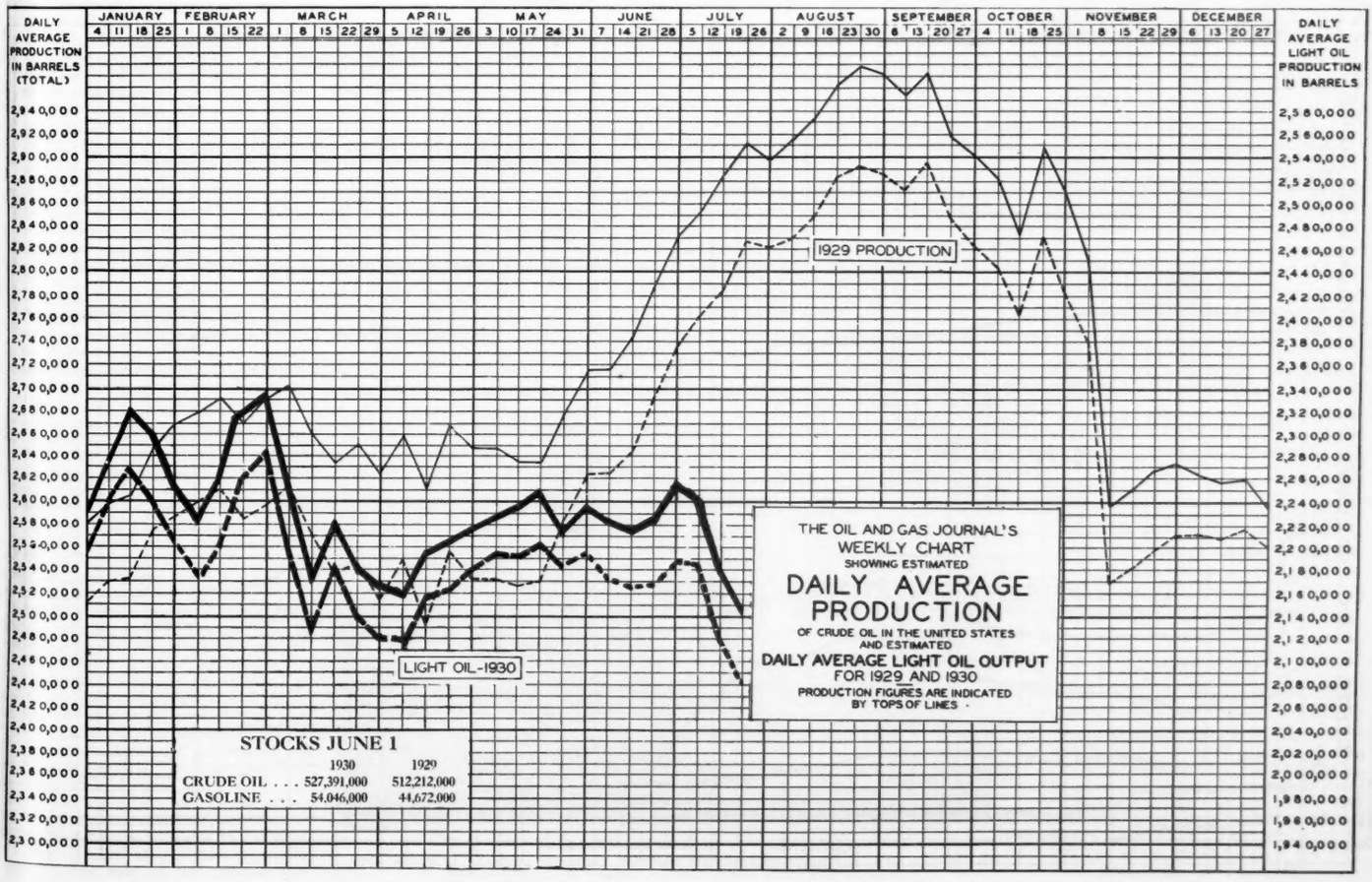
The present promising situation is due to long, intensive efforts on the part of leaders of the industry in every section of the United States. It is still a long road to prosperity. Stocks of all oils must be reduced considerably. Any let-up of the present policy in any of the active areas might "upset the apple cart" almost overnight.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended July 19, and a comparison with the previous week follows:

	July 19		July 12	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	74,165	.....	83,480	.....
St. Louis-Pearson	29,410	.....	30,665	.....
Seminole	177,545	.....	193,765	.....
Northern miscellaneous	243,420	.....	247,205	.....
Southern fields	61,210	.....	60,070	.....
Total Oklahoma	585,750	.....	615,185	.....
West Texas—				
Hendricks	68,660	.....	69,783	.....
Yates	108,956	.....	115,270	.....
Remainder	121,091	.....	119,538	.....
Total West Texas	298,707	.....	304,591	.....
North Louisiana	34,115	5,265	34,300	5,230
Arkansas	17,825	37,580	17,785	37,810
North Central Texas	125,978	.....	134,018	.....
Texas Panhandle	101,726	.....	102,588	.....
East Central Texas	40,037	.....	40,001	.....
Kansas	116,240	.....	127,770	.....
Total Mid-Continent area	1,320,378	42,845	1,376,238	43,040
Gulf Coast	.....	205,148	.....	202,968
Southwest Texas	.....	88,186	.....	89,223
Eastern	133,000	.....	133,000	.....
Rocky Mountain area	105,975	.....	88,461	.....
California—				
Santa Fe Springs	112,500	.....	113,000	.....
Long Beach	100,500	.....	99,500	.....
Huntington Beach	28,250	.....	28,000	.....
Elwood	46,000	.....	44,000	.....
Ventura Avenue	50,000	.....	49,500	.....
Seal Beach	21,000	.....	22,000	.....
Remainder of State	166,000	86,500	165,500	87,000
Total California	524,250	86,500	521,500	87,000
Total United States	2,083,603	422,679	2,119,199	422,231
Grand total	2,506,282		2,541,430	

→ **Total Decrease 35,148 Bbls.; Light Oil Decrease 35,596 Bbls.** ←



Better Feeling in Oklahoma Market

Less Low Priced Refinery Gasoline Available With Sharp Recovery in Natural Gasolines. Reduce Bright Stock Prices

By C. O. Willson

The past week in the Oklahoma (Group 3) market brought a narrowing of spreads in gasoline tank car sales due to the elimination of the lowest priced material available from several sources the previous week. A steadier tone was also apparent in several of the other products although price levels were unchanged except natural gasoline which has recovered sharply from the drop of the previous week.

A low of 6 cents on U. S. Motor gasoline sales to the trade was in prospect for the Oklahoma market. Although a majority of the refiners in the State have not sold under 6 cents in the recent slump with 6½ cents the low for a number of the larger operators, there were a few companies which have consistently sold specification U. S. Motor gasoline as low as 5½ cents.

The better tone in the gasoline market is considered a reflection of improved conditions within the industry. Crude oil curtailment efforts in the Mid-Continent are meeting with success as shown by the substantial reductions in current production. There are still some weak spots in this branch of the industry. Cases are cited in which crude oil has been made available to refiners in the Mid-Continent at delivered prices which amount to reductions in the schedules as posted by major companies. While the quantity of this material is relatively small, it brought a fear that it would increase in importance and shortly bring a general lowering of prices. This situation is generally known in the trade and constitutes one of these so-called "psychological factors" which have tended to nullify efforts at price recovery.

REFINED MARKET BAROMETER

California led in an improved refinery market situation over the past week. The West Coast curtailment of refinery operations has been in effect long enough to bring a healthy balance in the supply and demand for several refined products and higher prices were reported in domestic gasolines, natural gasolines and some grades of fuel oil and distillate. Outside of the West Coast price changes were of minor importance. Practically all areas reported a better felling in regard to refinery gasolines but price cutting was still general in certain sections. Fuel oil and distillates slow except in coastal area where the demand continues steady. Lubricant market weak. Some improvement noted in demand for wax.

Mid-Continent—Less dumping of gasoline by refiners and better tone to market in all areas. Natural gasoline prices recover rapidly. Fuels slow. Kerosene prices unchanged. Bright stock and steam refined stock prices lower. Better demand for wax.

East Coast—Gasoline market "marking time" with some price cutting reported. No change in slow kerosene market. Gas oil soft. Fuel oil steady. Several grades of wax higher.

Chicago—Heavy gasoline consumption and improved refinery demand. Light demand for fuel oil and gas oil. Kerosene dull. Lubricants unchanged.

Gulf Coast—Gasoline steady following reduction of last week. Firmer fuel market. Neutral oils steady.

California—Refinery gasoline prices in Los Angeles area advanced. Natural gasoline prices higher. Several grades of fuel oil and distillate advanced. No change in gasoline prices for coastwise and export movement.

Pennsylvania—Prices lower on some grades of steam refined stocks, bright stocks and natural oils. Gasoline weak. Other products unchanged.

Those in touch with the crude oil situation now believe that the 100 per cent application of curtailment programs will result in readjustments which will shortly eliminate any surplus crude oil supplies. Market students point to this condition as the basic development needed over the next several months to bring about improvement in the refinery market.

Some improvement in the highly competitive situation among a few Middle Western refiners, noted in these columns in previous issue, is reported. These refiners have taken the desirable spot tank car prices in local territories with little regard to prices. This includes the purchases of some of the large taxicab, bus and truck operators who generally buy late in the month for delivery over the succeeding months. Some of this business has been placed at prices so low that Oklahoma and other Mid-Continent refiners did not attempt to participate. This situation is improving and it is hoped by sellers that this type of competition will return to a normal basis before the start of a new month.

Natural Gasolines

Natural gasolines after a steady decline early in the month recovered sharply the latter part of last week and the first two days of this week. Manufacturers are expecting additional recovery before the end of July with a strong market in August. Grade A on Tuesday was quoted 4½ to 4¾ cents; Grade AA, 4½ cents and the remaining grades at 4¼ cents.

Two or three developments are aiding the natural gasoline market and to that extent will tend to encourage a recovery in the motor fuel market generally. So far as the July market is concerned it became apparent last week that relatively little spot material was available for shipment over the remainder of the month. When naturals weakened early in the month a number of manufacturers hastened to make sales covering their anticipated production over July. Many sales of Grade AA were made at 4 cents or less. This wave of selling, although it temporarily depressed prices, did remove the distress material and made possible the recovery of the past few days.

The new crude oil curtailment programs have also contributed to the improvement by reducing the current output of natural gasoline. In line with this program which has caused additional wells to be shut in or curtailed to a small fraction of their potential production, casinghead gas supplies have been restricted. The drop in production has

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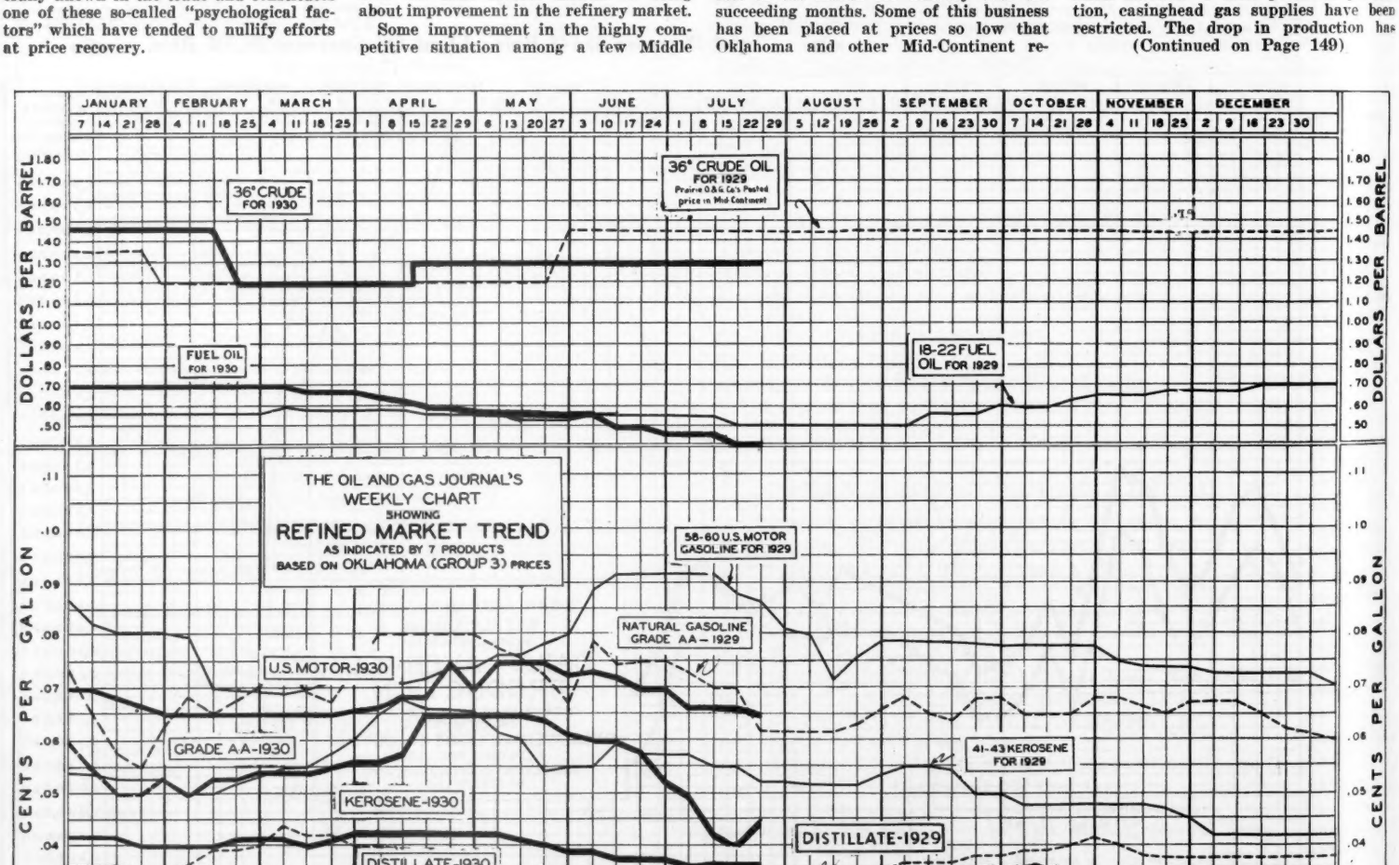


Hobbs Area Prorated at 35,000 Bbls.

Agreement Reached Between Operators, State Officials and Pipe Line Companies Will Limit Outlet From Pool

By L. G. E. Bignell
Petroleum Engineering Editor

HOBBS, N. Mex., July 17.—With operators in other fields curbing production and conserving gas, developments in this new area in Lea County, New Mexico, are being watched with much interest. There seems to be no need for apprehension that conditions here will be such that the good work being accomplished elsewhere will in any way be undone by unrestricted drilling and producing.

In fact all companies operating in this field together with the state officials are very definitely committed to a proration plan that at this time is restricting the output of the field to about 35,000 bbls. per day even though the estimated potential is about 175,000 bbls. daily.

During the past week two wells of over 20,000 bbls. capacity were brought in and the area now being drilled seems to give promise of several other large producers in the near future. There are at this time no data available that will outline the producing zone in any direction except to the south where water was encountered some time ago.

South End of Field

In the south end, however, it is interesting to note that two wells there have a recorded potential capacity of 5,256 and 6,432 bbls. each. They are Prairie Oil & Gas Co.'s No. 1 Crump and Midwest Refining Co.'s No. 1 State, both in Section 15-19s-38e. Other wells in this same section and in Section 10-19s-38e, immediately north of it, range from 422 to 1,082 bbls. each, the largest well of this group being Prairie Oil & Gas Co.'s No. 2 Crump, south offset to the 5,000-bbl. well.

Out of 26 producers on July 15 the estimated potentials of 13 of them were over 5,000 bbls. daily, while the others ranged from 20 to about 1,000 bbls. capacity. The larger wells are in Sections 29, 30 and 32 in Township 18s, Range 38e, near what is now the north limits of production in the field.

This area of large wells seem to be quite uniform in its type of formations and the pay zone is approximately 175 feet thick there, while at the south end there is only about 25 feet of pay before water is encountered.

Similar to Hendricks Pool

Those operators who are familiar with the Hendricks Pool in Winkler County, Texas, are inclined to place the Hobbs structure in the same class as that found at Winkler and if this is proven it will mean that the Hobbs "high" will be a long, comparatively narrow formation that is now developed for 5½ miles north in a northwesterly direction from the discovery well and the estimates as to the further extension of this field to the northwest are all the way from 3 to 10 miles. This would make a pool equal in size to the Hendricks Pool, which is 10 miles long and about 4 miles wide and covers approximately 10,000 acres.

Hendricks Pool has the major portion of its production in a strip from 6 to 12 locations wide but the structure map prepared by Messrs. Ackers, DeChicchis and R. H. Smith for the American Association of Petroleum Geologists shows that the brown and white limes of that pool at places extend from a mile to 1½ miles to the east of the major portion of the pool, which accounts for their statement that the pool is 4 miles wide.

From all indications the Hobbs structure will be comparatively narrow, perhaps from 8 to 10 locations in an east-west direction, for at this time two wells drilling to the east of the present production are reported as running low. These wells are Maljamar and Landreth's No. 1 State in Section 7-18s-38e, and a cable tool test being drilled by Hobbs High, Inc., known as No. 1 Tatum, in Section 35-18s-38e, just east of the townsite of Hobbs, which found the base of the salt at 2,605 feet with a surface elevation of 3,605 feet. These two tests are running about 300 feet low and may indicate a deep dipping east flank on this structure.

Located on High Mesa

This field is located upon a mesa or plateau known as the Llano Escatado or Staked Plains of the Texas Panhandle region that extends west into New Mexico. The town of Hobbs is about 75 miles northeast of Carlsbad, N. M., and is served by the new Texas & New Mexico Railroad which is built north into Lovington, N. M., a town about 32 miles north and a little west of Hobbs.

The field is also reached by good automobile roads and being a modern oil field two airship lines already serve it, one from Amarillo, and the other connecting the region with Midland, Tex. It is a very common sight to see planes arriving at the Hobbs airport from many of the principal cities in the states adjacent to New Mexico and flights have been made there from California and other distant points.

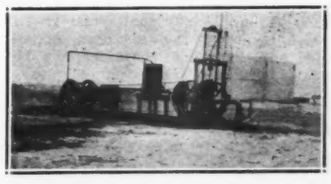
The original townsite of Hobbs is located in the south half of Section 34-18s-38e and is an incorporated municipality. Since the active development of the field has begun two other townsites have been incorporated, one in the north half of Section 3-19s-38e and another to the east of these two towns. There are three mayors and groups of city officials serving these respective towns, but the government post office is still maintained at Hobbs and the railway station is also at that point. It appears that later there will be a consolidation of these three towns into one city and at the present rate of growth it would appear that it will have a total population of about 8,000 people.

General view of the freight yards and warehouse district Hobbs, N. Mex.

The plateau upon which the field is located is about 3,600 feet above sea level and the land around Hobbs is very level. It is an arid country with high summer temperatures but being a very dry climate with low humidity living conditions are not unpleasant even on the hottest days, and nights are always cool and some bed covering is necessary.

Shallow Water

There are no surface streams but at a depth of about 60 feet a good flow of water is encountered and at 90 feet there is another underground water course that flows an abundance of very good water. Wells are being drilled to both of these water levels to secure water for both domestic and field use and as the water is quite pure, although hard, it is most acceptable.



Water well outfit in Hobbs Field.

About 30 miles to the west of Hobbs the edge of the Llano Escatado is reached and the land drops off very abruptly into the Pecos River Valley which is a very different type of country, being quite sandy. The Pecos River Valley is approximately 60 miles wide and extends to the west of the Pecos River channel to the foothills of the Guadalupe Mountains.

Generalized Geological Section

The generalized geological section of the Hobbs Field is:

	Thickness	Accumulative
Red beds	1,400 feet	
Anhydrite	100 feet	1,500 feet
Salt	1,000 feet	2,500 feet
Anhydrite	1,200 feet	3,700 feet

Below this level the producing zone is found, although there is a sweet oil zone at about 3,100 feet in a sand formation. The production below 3,700 feet is found in a series of brown and white limes very similar to those found in the Hendricks Pool.

The log of the Tidal Oil Co.'s No. 1 W.

(Continued on Page 148)

C. G. STALEY HAS BEEN APPOINTED UMPIRE FOR HOBBS, N. MEX., AREA

By L. G. E. Bignell

ROSWELL, N. Mex., July 18.—Before a meeting held here today by the executive committee in charge of the proration of oil in the Hobbs area, Lea County, New Mexico, Dr. A. D. Crile, state land commissioner, told the assembled members of the various companies that they might expect the support of the citizens and the State of New Mexico as long as proration identified itself with fairness to all concerned, especially with reference to the State, whose institutions were vitally interested in the State's resources.

Various details concerning the proration were considered and settled. The outlet of the field at the present time will be 35,000 bbls. per day. In order that the outlet of the various wells shall be determined on a similar basis, it was the recommendation of the committee that wells be tubed with 3-inch tubing.

When gauged, the wells are to be allowed to flow unrestricted through the 3-inch tubing for three hours and in order that the gas, which will vary, shall be eliminated as far as possible, the gauge will be determined on the second and third hours' flow. The quantity of oil thus obtained will be multiplied by 12 in order to determine the 24-hour potential of the wells.

Although not an applicant for the po-

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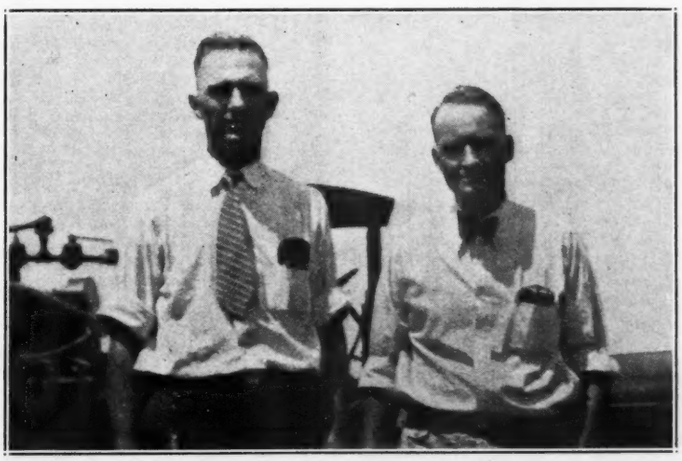

Left, Ernest A. Hanson, petroleum engineer, Department of Interior, New Mexico district; right, C. G. Staley, umpire, Hobbs area, New Mexico.

Logs of Winkler Pool Now Valuable

Geology of Hendricks Field of Particular Interest at This Time Due to Development of Similar Area at Hobbs, New Mexico

By A. L. Ackers, R. DeChicchis and R. M. Smith
Geologists Southern Crude Oil Purchasing Co.*

he Hendricks Field is worthy of special mention, since at the time of its discovery it was located in what was thought to be the deepest part of the Permian geosyncline of West Texas.

It must be remembered that subsurface control at that time was limited to a few wells located many miles apart, some drilled into the Delaware section, while others drilled into the so-called "Big Lime."

Hendricks Field was the first field in West Texas to be placed under proration.

The gravity of the oil averages 28.7° Be. Several wells registered slightly over 1,300 pounds rock pressure, and one well, Southern Crude Oil Purchasing Co.'s T-88-M-1, registered 1,620 pounds.

The largest initial production based on one-hour flow test was 98,000 bbls. per day from Cranfill & Reynolds' No. 1-C Hendricks, located in Section 33, Block 26.

On February 1, 1930, the gross production for the field was 113,427,000 bbls. from 612 wells, on approximately 10,000 acres.

There have been 630 wells completed, 18 of which are dry holes. At the present time 564 wells are producing.

The writers wish here to express their appreciation to the various companies and individuals for information and samples made available. The description of well cuttings and the determining of lime tops in the field are the work of L. C. Roberts, Jr., R. B. Cheney and the writers.

Two systems, Triassic and Permian, are encountered in the wells in the Hendricks Field. The study of the Triassic and upper Permian in this area has been handicapped by the lack of cuttings from these formations.

Below the surface sands and above the anhydrite of the Permian is a series of sandstones, sandy shales and gravels, which, because of their stratigraphic position and lithologic character are correlated with the Triassic of other areas. The character of the Triassic of West Texas has been thoroughly described by J. E. Adams.

The thickness of this formation as roughly determined from drillers' logs and available samples shows considerable variation throughout the field. The greatest thickness is attained on the extreme west flank, where as much as 1,500 feet is present, and thins rapidly to the east, being about 600 feet thick on the east side of the fold.

Permian Section

The Permian section penetrated in wells in this area is generally divided into two parts, an upper red bed and evaporite series, and a lower dolomitic limestone.

The upper part of the Permian in this area is represented by several hundred feet of brick red shales and sandy shales with varying amounts of gypsum, the unconformity between this section and the overlying Triassic being marked by irregularity in thickness of the Permian red beds and occasional beds of gravel and coarse sands at the base of the Triassic.

In this area the evaporite series may be divided into two parts, an upper anhydrite-dolomitic limestone series and a lower anhydrite salt series.

The base of the upper Permian red shales marks the top of the anhydrite-dolomitic limestone series which ranges from about 250 feet thick on the west side of the Hendricks Field to about 200 feet thick on the east side. Drill cuttings from wells on the west side of the field show 100 feet of anhydrite and gypsum, 50 feet of tan to light gray, porous, often oolitic, dolomitic limestone, 20 feet of dolomitic limestone and soft blue shale, and 70 feet of soft red and blue shales, with occasional dolomitic limestone stringers. Because of the lithologic character and stratigraphic position of this formation, it is correlated with the Rustler of G. B. Richardson.

The Rustler section grades to anhydrite, salt and red shales to the east, and in eastern Winkler County there is no dolomitic limestone present in this section.

Anhydrite Salt Series

The anhydrite salt series ranges in thickness from 700 feet on the extreme west side of the producing area to 1,500 feet on the east flank (Figure 2). There are two distinct salt zones present in this area, an upper salt zone of variable thickness and extent, and a lower persistent zone.

The upper salt generally occurs immediately below the Rustler section. Often it is found in contact with the dolomitic limestone of the Rustler, while in some areas it is separated from this limestone member by a variable zone of anhydrite, red and blue sandy shales. In the Gulf Production Co.'s No. 1 Hendricks, located in the NW cor., Section 34, Block B-5, this being a direct east offset to the discovery well, this salt series has a thickness of 610 feet, while in the Southern Crude Oil Purchasing Co.'s No. 67-1-A-1, Hendricks, the discovery well, this upper salt zone is 490 feet thick.

The direct west offset to this well, the Independent Oil & Gas Co.'s No. 1 Hendricks did not encounter any true salt in this zone. Samples, however, show an abundance of salt filling fractures and cavities in the anhydrite section. That this well drilled through a fractured zone is shown by the large number of anhydrite fragments, varying from a few inches in diameter to as much as 6 inches, that were encountered. Little is known of that area between the most westerly producers and the Humble Oil & Refining Co.'s No. 1 Hendricks in Section 36, Block 26.

The upper salt series again appear in

Figure 1—Sketch map of West Texas, showing location of Hendricks Field with respect to known major lines of folding.

this test, although the zone is only 160 feet thick. Eastward from the Gulf Production Co.'s No. 1 Hendricks this salt zone gradually thickens, and in the Southern Crude Oil Purchasing Co.'s No. T-90-1, it has attained a thickness of more than 900 feet. The top of the salt in this well was encountered at plus 1,905 feet sea level datum, this being the highest top of salt point in the area.

Lower Salt Zone

The lower salt zone is of fairly uniform thickness throughout the producing area, and is approximately 40 feet thick.

Anhydrite occurs throughout the upper salt series. One zone about 200 feet in thickness separates the upper and lower salt. From the base of the last salt to the top of the "Brown lime" is a 50-foot bed of hard, finely crystalline anhydrite, which is persistent throughout the area (Figure 2).

The absence of salt on the extreme west flank of the producing area can be attributed to solution and subsequent slumping. There is much evidence that fracturing accompanied movements at the end of Rustler time, these fractures giving access to underground waters and resulting in solution of the salt. To explain the absence of salt in some areas of the Hendricks Field by gradation does not seem plausible, when it is considered that as much as 500 feet of salt encountered in one well is missing in an offset well, as is the case in the discovery well and its west offset, the Independent Oil & Gas Co.'s No. 1 Hendricks.

Great differences in the salt section are also encountered in wells having the same elevation on structure such as the Richardson No. 1 Sealy, in Section 50, Block F, and the Wentz Oil Co.'s No. 1 Morton, in Section 27, Block B-12. These wells are less than one-half mile apart, yet the Wentz well encountered a total salt section of 915 feet as against 490 feet in the Richardson well.

The deep syncline on the Rustler (Figure 2) is probably due to two factors, slumping due to solution of salt and structural movements during Triassic time.

The Big Lime

Beneath the anhydrite series in this

(Continued on Page 106)

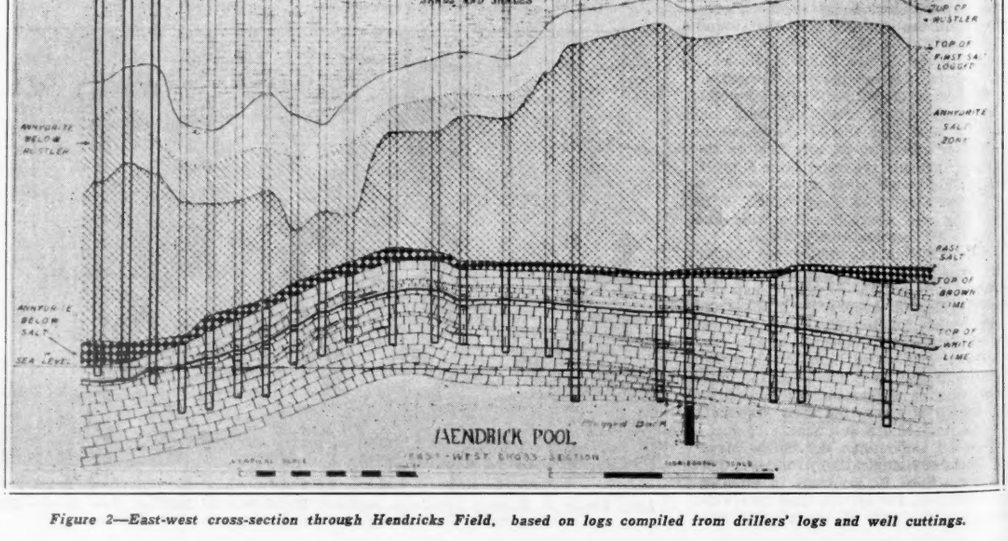

Figure 2—East-west cross-section through Hendricks Field, based on logs compiled from drillers' logs and well cuttings.

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Testing Washington for Oil and Gas

Already a Gas Field and Pipe Line in the State, but Oil Is Objective of Score of Widely Scattered Tests

By Special Correspondent

SEATTLE, Wash., July 19.—Spurred on by numerous seeps of high quality oil and encouraged by reports of geologists surveying the various areas, Washington is engaged in an intensive effort to discover oil in paying commercial quantities. The search is going on simultaneously in all parts of the State and to date some thiry odd drilling operations are actually in the field drilling or rigging up with a score or more indicating that they would soon be making hole also.

But while oil has thus far been confined to seeps, natural gas is an established fact and is now being produced in commercial quantities and distributed to towns in the Yakima Valley.

Gas was first commercialized in 1928 with the advent of the Northwestern Natural Gas Co. of Wichita, Kans., although wells were drilled in 1917 and the production capped. The Northwestern Natural Gas Co. has constructed a main pipe line of 40 miles with 41 miles of feeder line, and is now serving the towns of Prosser, Sunnyside, Grandview and Mabton. Franchises are held for service to at least 10 more towns of the valley and plans are projected for the extension of the pipe line to them.

Nine Producing Gas Wells

The gas is coming now from nine wells, all drilled in the Rattlesnake Hills of Benton County, in which area there has, thus far, been no dry holes drilled. The wells are all shallow, from 700 to 900 feet deep. The latest to come in, on July 2, proved the largest producer yet had. This well also extended the area for a distance of one-half mile west.

Two deep tests are going on near by, seeking both oil and the parent pool of gas. One located near Wapato, drilled by the Simcoe Oil Co., is down some 2,100 feet, with reported shows of gas and oil. The Miocene Petroleum Co., drilling at Union Gap, near by, encountered a flow of gas estimated at 6,000,000 feet at a depth of 940 feet. However, no arrangements have been made to save the gas until a test for oil has been made to at least 2,000 feet.

Campbell Petroleum Co., producer in the Kevin-Sunburst Field in Montana, has announced that it would drill a deep test in Mabton about September 1.

Varied Drilling Systems

The lava overburden in the area is underlain by sedimentaries of Miocene, Eocene and possibly Cretaceous age. Drilling in the producing area has all been done with Star portable rigs, although the Miocene operation is employing a cable tool outfit with an 84-foot derrick, and Simcoe is using both rotary and cable.

In Western Washington

In western Washington the spotlight has been centered on Whatcom County, near the Canadian border. Four tests are now being made in the area. The most promising, at this writing, is that of the Sumas Oil & Gas Co., operating on Sumas Prairie, just over the international line in British Columbia. This venture, financed by Canadian capital, is taking the benefit of a bore put down a year ago or so, which was lost when a heavy gas pressure could not be handled, and the hole caved. This time they are proceeding cautiously and expect to get into the same gas stratum within the next 100 feet. Hole is now bottomed at about 600 feet.

On the American side, the Home Petroleum Co. is making a test of the Birch Bay structure and is down about 200 feet. Acme Oil & Gas Co., on the Ferndale anticline, has been reorganized and is preparing to resume the operation with new equipment. This bore was down 270 feet on suspension. Bellingham Oil & Gas has all equipment and rigging in place and is preparing to spud in a test on the Goshen structure.

Prospects for the area have been considerably brightened with news that Barnsdall Oil Co. of California had taken 14,000 acres of Whatcom land and would test it out if a company geological survey is favorable. A crew of field men under direction of R. W. Sherman, chief geologist, is now making the survey. If it checks, Barnsdall is under contract to the Washington North Counties Petroleum Co., from whom the acreage was obtained, to drill within six months.

On the Olympic Peninsula

On the Olympic Peninsula, where talk of potential oil lands has been common for many years, two tests are now preparing to drill. The Pacific Coast Oil & Gas Co., directorate composed of some of the Northwest's industrial leaders, including Moritz Thompsen, president of the Pacific Coast Biscuit Co., and William Calvert, president of the Pacific National Bank, are preparing to spud in their test of Quillautte Prairie, which probably is the most westerly point in the United States. Geology on this site was determined by Dr. Robert B. Moran of Moran & Palmer of Los Angeles. At Forks, in Clallam County, Mohawk-Olympic Co., Ltd., Canadian financed, has spudded in with a Star rig for a test of Forks Prairie.

Core Drilled in Jefferson County

Jefferson County, just south of Clallam, has recently been surveyed for Olympic Oil & Refining Co. of Long Beach, Calif. This company, which is reputed to be sponsored by the Dollar shipping interests, has been engaged in diamond drilling in the vicinity and has announced that a drilling campaign would be undertaken very soon.

The Grays Harbor country is the scene of the operations of the Vesta well, which, at this writing, is reported to have excellent showings of both gas and oil at a depth of some 1,300 feet; and the Gray-Tac Co. is drilling at about 200 feet, within the corporate limits of the city of Aberdeen.

At the mouth of the Columbia River, Union Oil Co. of California is drilling at McGowan. Although this particular site has not been credited by many geologists with having favorable chances, Union is continuing drilling below 4,250 feet, despite the fact that the original agreement with the landowners called for a hole to only 4,000 feet.

Drilling near Seattle

Two tests are going down within striking distance of Seattle. One at Chico, in Kitsap County, is down 1,000 feet, and the other at Warm Beach, in Snohomish County, is down about 200 feet in the second attempt in the vicinity, No. 1 having been recently abandoned.

A test of Samish Island, where a seep has attracted attention for years, is being prepared for by the Merger Gas & Oil

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Directors Approve Sinclair Sale

Indiana Company Pays $72,500,000 for Other Half of Pipe Line and Crude Oil Purchasing Companies

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, July 19.—Directors of Sinclair Consolidated Oil Corp. have approved the sale for $72,500,000 cash of the company's 50 per cent interest in the Sinclair Pipe Line Co. and the Sinclair Crude Oil Purchasing Co. to the Standard Oil Co. of Indiana, which has been hitherto owner of the other half interest in these two companies.

While the announcement by H. F. Sinclair on Thursday, July 17, of the deal with Standard of Indiana related only to this transaction, it is believed that the sale signalizes the completion of merger negotiations between Sinclair Consolidated and Prairie Oil & Gas Co., which will result in the creation of an oil company with aggregate assets in excess of $800,000,000. Inclusion of other companies which have been mentioned in conjunction with the Sinclair expansion plan would result in a combine with assets exceeding $1,000,000,000.

Announcement of the sale of the Sinclair Pipe Line Co. and Sinclair Crude Oil Purchasing Co. holdings to Standard of Indiana was accompanied by a statement from Mr. Sinclair to the effect that the company's pipe line and crude oil supply positions had been safeguarded, which is taken as confirmation of the imminence of the closing of the Prairie consolidation deal. This consolidation, when completed, will give the Sinclair Corp. pipe line and crude oil purchasing facilities more than equivalent to those which have just been relinquished in the Standard of Indiana transaction.

May Go Into California

Aside from paving the way for consummation of the Prairie deal, the cash received by Sinclair Consolidated in the Standard of Indiana transaction is also expected to furnish sufficient additional working capital to enable Sinclair to finance its long contemplated entry into the Pacific Coast producing, refining, and distributing field. While Sinclair has at various times been reported negotiating with a number of California oil companies, including Richfield, Rio Grande, Tide Water-Associated, and others, current reports have it that the Sinclair entry into California will be through acquisition of the Associated Oil Co. of California from Tide Water. Although Union Oil Co. of California has not been mentioned in conjunction with Sinclair's Pacific Coast plans, there is a possibility of a deal between the two concerns, it is intimated in usually well informed circles.

Acquisition of both Associated Oil and Prairie Oil & Gas by Sinclair Consolidated would give the Sinclair organization one of the largest oil corporations in the world, and probably the largest American company, aside from the Standard group. Belief that Sinclair would acquire Associated has received impetus through the recent deal whereby a syndicate of executives of Tide Water-Associated purchased from Standard Oil Co. of New Jersey a block of more than 1,000,00 shares of Tide Water-Associated. It is generally believed in financial circles that Bancamerica-Blair, Sinclair's banking sponsors, financed this purchase. The Bancamerica-Blair organization, aside from being bankers for the Sinclair organization, also control Petroleum Corp. of America and are bankers for the Prairie Oil & Gas Co.

Sinclair's Formal Announcement

The formal announcement of the Sinclair transaction with Standard Oil Co. of Indiana follows: "The board of directors of Sinclair Consolidated Oil Corp. today approved, subject to the vote of stockholders, a contract for the sale of Sinclair's one-half interest in the Sinclair Pipe Line Co. and the Sinclair Crude Oil Purchasing Co. to the Standard Oil Co. of Indiana, owner of the other half interest. The board of the Indiana company is expected to approve the contract immediately. The consideration was $72,500,000 in cash. The total Sinclair investment in the two companies was $34,189,000.

"H. F. Sinclair, chairman of the Sinclair board, stated that the company had in view steps which would amply protect Sinclair with respect to crude oil supply and pipe line facilities to take the place of those now to be disposed of."

Indiana Directors Approve

CHICAGO, Ill., July 18.—The board of directors of the Standard Oil Co. of Indiana today approved the contract with the Sinclair Consolidated Oil Corp. to acquire that company's one-half interest in the Sinclair Crude Oil Purchasing Co. and the Sinclair Pipe Line Co. for a cash consideration of $72,500,000, which will give the Indiana company full ownership.

In announcing the directors' action, Edward G. Seubert, president of the company, said that the purchase, one of the largest in the history of the oil industry, would be carried out without resort to outside financing. Payments will be made from the cash resources of the company.

Mr. Seubert announced further that if plans can be carried out as made the transfer of full control of the companies to the Standard of Indiana will take place about September 10. Their names will thereupon be changed to make them indicative of the new relationship to the Indiana company.

Mr. Seubert's Statement

"In taking over Sinclair's interests in these two companies," Mr. Seubert said in explaining the transaction, "the Indiana company acquires gross assets with a book value of approximately $162,000,000 as of May 31. These include current assets of $110,500,000, made up of 36,000,000 bbls. of crude oil, working supplies, accounts receivable, and about $10,500,000 of cash in bank. The original investment of the Standard of Indiana in the companies plus the cash consideration in the present transaction will bring our total outlay to about $118,700,000. We, of course, assume the other half of the total bonded indebtedness of $53,000,000.

"The outstanding advantage of the purchase to Standard of Indiana is that it will give us full control of pipe line facilities from Houston, Tex., through the Mid-

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Socony-Vacuum Argument Offered

Government Closes Its Presentation of Case. Counsel for Companies Contend Dissolution Decree Not Violated

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, July 21.—Following the introduction of voluminous testimony by the Government designed to show that the proposed consolidation of Standard Oil Co. of New York and Vacuum Oil Co. would create a monopoly and would be in direct violation of the dissolution decree of 1911, counsel for the two companies opened their defense. Presentation of the Government's testimony brought to light many interesting angles of the businesses of the two companies.

Following announcement that the Government had rested its case at the hearings before former Judge Fred L. Williams, sitting as special master, Goldthwaite H. Dorr, counsel for the defendant corporations, contended that the law would not be violated by the proposed consolidation, and asserted that mere elimination of competition was not in violation of the law. The dissolution decree of 1911, he said, did not of itself prohibit the reunion of two of the former Standard units where a monopoly was not created.

"We contend, as government counsel correctly stated," said Mr. Dorr, "that the decree does not forbid conduct otherwise lawful; that the decree does not deprive these former subsidiaries of the old New Jersey company, after being freed from its illegal control, of the right that all citizens have to live within the law of the land; that the decree only forbids them from creating a monopolistic combination in violation of the Sherman law, like the one found by this court in the original suit, and from the control of which they were freed by that decree.

"The Government has come into court asking that the defendants be enjoined from conduct which it claims is prohibited by the decree entered in this case in 1911. The petition alleges that the carrying out of the contract by which the assets and business of Vacuum Oil Co. are to be transferred to the General Petroleum Corp., now known as Standard Oil Co. of New York, is a violation of terms of the decree.

Issue in Interpretation

"The issue between the defendants and the Government is the interpretation of the language of Section 6 of the decree. The defendants contend that the language of the section in determining what they were enjoined from, is the provision that they are 'enjoined from and prohibited from continuing or carrying into further effect the combination adjudged illegal hereby, or from entering into or performing any like combination or conspiracy, the effect of which is, or will be, to restrain interstate or foreign commerce in petroleum products or prolong the old unlawful monopoly,' in violation of the act of July 2, 1890.

"The defendants contend that the decree forbids the use of liquidating certificates, the conveyance of physical property and business of one of the former subsidiaries to another potentially competitive former subsidiary, the placing of control of any of said corporations in the hands of a trustee, the placing of the property of any of these corporations in the hands of another than its equitable owners, such as trustees for creditors or other mortgage, only when such acts will effect a combination or conspiracy like that terminated by the decree.

"The Government, on the other hand, interprets the decree as forbidding certain conduct by the defendants, although not shown to be a violation of the statutes. It follows from the Government's interpretation that there is a violation of the decree if liquidating certificates are used, or if other acts mentioned in Section 6 of the decree are committed, irrespective of the effects of these acts. The Government in rejecting our interpretation must contend that the acts in question do not establish that the conduct of the defendants is in violation of the statutes, nevertheless they are perpetually forbidden by the decree. The Government claims that to show a violation of the decree it is not necessary to show a violation of the Sherman law; that the court by its decree has forbidden certain conduct by the defendants, though Congress has not seen fit to make that conduct unlawful. In other words, that the court has, contrary to all principles of laws, perpetually enjoined the defendants from doing lawful acts.

Vital Difference

"These radically different interpretations by the parties of the language of the decree vitally affect the scope and character of the evidence that is to be introduced in this proceeding. If the Government's interpretation be adopted, the material facts are very simple and are admitted. If the effect of the decree is to forbid for all times one of the former subsidiaries of the old New Jersey company from ever conveying its property to another potentially competitive former subsidiary, irrespective of whether such transaction is shown to be a violation of the Sherman law, or entered into in the course of such a violation, then the contract now before the court is contrary to the terms of the decree.

"If the defendant's interpretation is a sound one, the situation is wholly different. The Government in that case cannot avoid the burden of showing that the proposed conveyance amounts to a re-creation of the old monopolistic combination or the creation of a like combination in violation of the Sherman law.

"It would have to make this showing in the light of the present state of the oil industry as a whole in the United States and of the relation of these defendants to it, both in their present separate status and in their status after the proposed conveyance has been consummated. Unless and util such a showing be made by the Government, if the defendant's interpretation of the decree is sound, there is no occasion for these defendants to offer any evidence whatever."

Statistician on Stand

C. M. Drebger, chief statistician for the Standard Oil Co. of New York, testified that there are approximately 900 companies competing for oil business in territory embraced by Socony's domestic operations in its New York and New England territory. Competition of numerous large integrated companies, as well as that of the many small units, he said, makes impossible the dominance of any one area by one company. During 1929, he testified, Royal Dutch-Shell and affiliated companies, produced a total of 229,379,000 bbls. of crude, while Standard Oil Co. of New York produced 55,941,314 bbls. and Vacuum 2,045,078 bbls. Daily average refining capacity of these companies, he said, was 843,800 bbls. for the Shell group, 228,500 bbls. for Standard of New York, and 35,100 bbls. for Vacuum.

At the close of the government presentation, Walter Lewis, accountant for the Department of Justice, introduced into evidence tables showing total sales of refined products in Standard of New York's territory for 1929. According to this table, Socony during the year handled 33.7 per cent of the aggregate volume, Vacuum 1.1 per cent, Shell 4 per cent; two companies identified only as "A" and "B" at 7.8 and 11.5 per cent, respectively, and all others 41.9 per cent.

Shell's growth in East Coast operations figured prominently in the testimony during the closing of the Government's case. Edward J. Leavitt, comptroller for Shell Eastern Petroleum Products, Inc., outlined the progress which Shell has made since its entry into this territory in February, 1929. Shell's sales of all petroleum products in the New England area during the 11 months of 1929 in which it operated were 7,175,241 bbls., his testimony showed, of which, 2,439,526 bbls. were gasoline. Shell sold in Massachusetts in 11 months last year 950,330 bbls., as against Socony's sales of 4,266,379 bbls. for the full year 1929 in that State.

Counsel for Socony and New York objected to the introduction of sales records of two companies operating in its territory when the Government asked that these figures be introduced without revealing the identity of the companies. The objection, based on the ground that there would be no opportunity for cross examination, were subsequently withdrawn, and the figures entered as representing the sales of companies "A" and "B."

Vacuum Director Examined

Changing competitive conditions within the oil industry, whereby leading interests have veered strongly toward the integrated system of operation, has forced Vacuum Oil Co. to seek fusion with such an integrated unit, and the proposed consolidation is the result, said Harold F. Sheets, a director of the Vacuum company, taking the stand for the defense.

The tendency within the oil industry during the past several years, he said, has been for the large producing and refining companies to operate filling stations at which they sell only their own products, both gasoline and motor oils. This trend, he said, has affected Vacuum's business to such an extent that directors of the company decided upon a merger with such an integrated unit, to protect the distribution of its products. Vacuum, he explained, seeks to form a union with Standard Oil Co. of New

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FOREIGN OPERATIONS OF SOCONY-VACUUM

Interesting data on foreign operations of Standard of New York and Vacuum was furnished by the following table, introduced into evidence by counsel for the defendant companies. This table, which shows foreign sales, classified as to products and countries, follows:

(Barrels of 50 gallons)

Country—	Kerosene		Gasoline		Lubricants		Fuel, Diesel and gas oils		Miscellaneous oils	
	Socony	Vacuum	Socony	Vacuum	Socony	Vacuum	Socony	Vacuum	Socony	Vacuum
Northern China, inc. Manchuria	1,798,818	.....	156,939	.....	103,486	16,710	345,160	.....	94,675	33
Southern China	460,574	.....	49,260	.....	13,599	6,743	424,573	.....	25,597	
Indo-China	178,246	.....	27,932	.....	6,743		.....	.....	18,546	
Siam	53,328	.....	12,669	.....	4,714		.....	.....	4,484	
Philippines	215,790	.....	221,803	.....	17,959	86,536	.....	.....	26,725	315
Dutch East Indies	327,642	.....	164,795	.....	18,414		10,430	.....	87,923	
Straits Settlements	84,724	.....	87,521	.....	16,578		89,813	.....	17,583	
Japan, Korea, Formosa	462,211	.....	537,927	.....	90,425	80,699	580,671	.....	47,313	
India, inc. Arabia-Persia	1,616,995	.....	6,839	.....	245,333		.....	.....	27,101	
Burma	24,467	.....	.....	.....	7,493	84,068	.....	.....	9,580	263
Ceylon	57,547	.....	.....	.....	2,181		.....	.....	44,410	
Bulgaria	62,168	.....	21,379	.....	10,917	.....	41,357	.....	468	.....
Syria, Cyprus, Cilicia	56,639	57,817	54,410	64,247	4,845	4,197	11,722	.....	11	.....
Greece	109,160	.....	152,771	.....	20,123	5,665	213,490	.....	2,561	.....
Turkey	143,409	.....	112,055	.....	19,015	2,226	558,901	.....	1,851	13
Jugo-Slavia	116,099	*43,338	84,042	28,994	58,051	9,811	81,987	1,517	15,276	.....
South Africa	.....	300,858	.....	574,940	17,747	90,933	.....	1,068	25,656	3,556
Australia	.....	462,834	.....	2,109,415	33,028	168,860	.....	120	1,121	59,320
Cairo, Sudan, Palestine	.....	591,405	.....	180,087	.....	34,547	553,256	67,983	.....	181
Rumania	.....	.....	.....	.....	.....	9,530	.....	.....	.....	.....
Portugal	.....	383,633	.....	555,265	.....	32,698	.....	19,183	.....	16
Spain	.....	.....	.....	.....	.....	31,807	.....	.....	.....	20
Finland	.....	.....	.....	.....	.....	11,956	.....	.....	.....	12
Italy	.....	.....	.....	.....	.....	96,106	.....	.....	.....	769
France	.....	.....	.....	.....	.....	332,342	.....	.....	.....	503
Denmark	.....	.....	.....	.....	.....	29,812	.....	.....	.....	70
Norway	.....	.....	.....	.....	.....	19,606	.....	.....	.....	11
Sweden	.....	.....	.....	.....	.....	42,351	.....	.....	.....	52
Germany	.....	.....	.....	.....	.....	160,149	.....	.....	.....	238
England	.....	.....	.....	.....	.....	334,231	.....	.....	.....	4,015
Hungary	.....	143,199	.....	117,103	.....	34,392	.....	34,145	.....	9,412
Poland	.....	61,560	.....	42,318	.....	31,873	.....	65,117	.....	16,707
Austria	.....	96,398	.....	218,184	.....	17,060	.....	24,462	.....	3,153
Czechoslovakia	.....	167,545	.....	383,272	.....	49,002	.....	38,325	.....	9,415
Gibraltar	.....	1,077	.....	3,316	.....	568	.....	.....	.....	1
Canary Islands	.....	18,273	.....	32,391	.....	2,789	.....	.....	.....	4
South America	.....	.....	.....	.....	.....	159,773	1,964	.....	.....	10
Mexico	.....	.....	.....	.....	.....	4,731	.....	.....	.....	.....
Canal Zone	2,266	.....	.....	.....	.....	.....	3,827	.....	.....	.....
Canada	.....	129	32,679	295	503	93,911	23,558	3,733	36	646
Alaska	.....	.....	.....	.....	.....	.....	105,406	.....	.....	.....
Hawaii	.....	.....	.....	.....	.....	1,824	.....	.....	.....	.....
Bunker sales at various points	.....	.....	.....	.....	.....	.....	288,766	.....	.....	.....
Total	5,764,083	2,328,066	1,723,021	4,309,827	691,154	2,087,506	3,334,881	255,683	450,848	108,736

*Amount refined by Socony for Vacuum. Portugal district includes Morocco and West Coast, Africa. French territory includes Belgium, Holland and Switzerland.

Deep Pumping Research in California

Study of Methods of Determining and Controlling Length of Plunger Stroke and Higher Volumetric Efficiency

By Bruce H. Robinson[1] and Robert R. Robinson[2]

With many wells in deep producing horizons declining in production to the point where they will no longer flow, and with the ever increasing necessity of keeping lifting costs on pumping wells to an absolute minimum, much attention has been directed toward:

1. The pumping of wells tubed below 5,500 feet.
2. Research into methods of determining and controlling the length of plunger stroke.
3. The attainment of higher volumetric efficiency.

Pumping of Wells Tubed Below 5,500 Feet

Pumping of deep wells in California is relatively new, and has presented many interesting features, the most important one that is probably pumping more deep wells than any other is using only three-quarters-inch rods from top to bottom in its wells with pumps below 5,500 feet, and to date has had very little rod trouble.

The main problems in pumping from these depths are as follows:

a. To allow for rod stretch or reduce it or its effects on the plunger stroke.
b. Proper counterbalancing.
c. Efficient pumping speed.
d. Reduction of sucker rod stresses.
e. Power and prime mover.
f. Mechanical rig difficulties.

Aside from the last, these are not independent variables, but each must be considered in conjunction with the others.

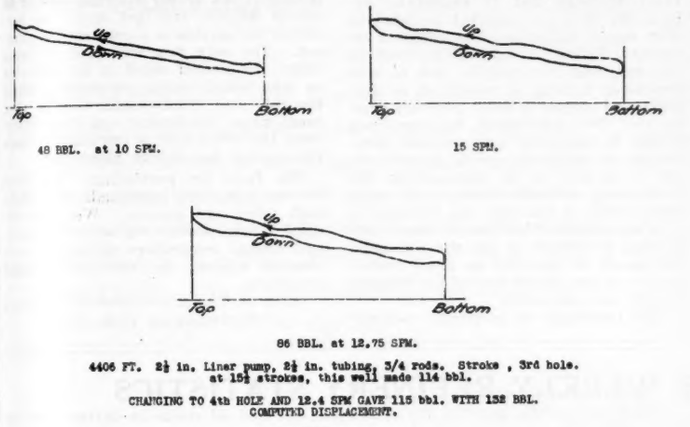
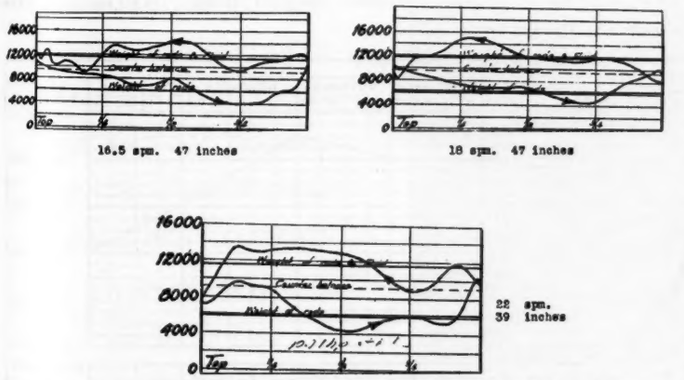

Up
Down
Top
Bottom
48 BBL. at 10 SPM.
15 SPM.
86 BBL. at 12.75 SPM.
4406 FT. 2½ in. Liner pump, 2¼ in. tubing, 3/4 rods. Stroke , 3rd hole. at 15½ strokes, this well made 114 bbl.
CHANGING TO 4th HOLE AND 12.4 SPM GAVE 115 bbl. WITH 132 BBL. COMPUTED DISPLACEMENT.

Figure 1.



STROKE in.	SPEED spm.	COUNTERBALANCE calculated rods + ⅓ oil	COUNTERBALANCE from card	on well $		DISPLACEMENT based on pol. rod stroke bbl/day	PRODUCTION bbl/day	VOL.EFF.
47	16.5	6852	9360	6615	70.8	356	191	56.5
47	18	6852	9490	9058	95.5	388	230	62.5
39	22	6852	9180	8445	91.9	370	242	65.3

Figure 2.

being that in spite of difficulties successful operation of strings of sucker rods from 5,500 to 7,000 feet in length is entirely feasible. At least one well is now pumping from below 7,100 feet, and many wells are pumping from 5,500 to 6,500 feet.

Both 2½-inch and 2-inch tubing and pumps are used, most of the pumps being of the insert type. As will be shown later, no sacrifice in production is made by using the smaller plungers of the insert type of pump. Some companies are using combination strings of three-quarters-inch and seven-eighths-inch rods, but Under a conservative program maximum production is not the controlling factor.

Rod and Tubing Stretch

Several remedies are available for the first problem. Whip out the rod stretch on the downstroke by underbalancing; increase the pumping speed to obtain the lengthening effects of rod and fluid inertia; decrease the fluid load; increase the stroke at the surface; use larger diameter rods. A further remedy might be added as a tentative possibility; changing the kinematics of the beam motion.

Decreasing of fluid load by using smaller size plungers has proved the most successful method, and on slow speed work does not decrease plunger displacement. This is an easy remedy to apply with an insert pump. Though it may seem an anomaly, it proves out in practice and can be shown by figures. Considering the slow pumping speeds necessary, the usual rod and tubing stretch formulas may be used to figure it. As an example, take a 6,500-foot well, 2½-inch tubing and three-quarter inch rods, average gravity of fluid pumped 35° A.P.I., pumping with a polish rod stroke of 64 inches:

The load of a 2½-inch liner pump would stretch the rods to such an extent that the plunger would not travel. With a 2½-inch insert pump, 1⅜-inch effective diameter the theoretical stretch would amount to 52.7 inches, leaving a plunger stroke of only 11.3 inches at 12 strokes per minute, the displacement would be 59.3 bbls. daily. In the same manner the 2-inch insert pump, 1⅞-inch effective diameter, would only cause 29.2 inches of stretch, leaving 34.8-inch plunger stroke, and at the same pumping speed would give 100 bbls. a day displacement.

Figure 1 illustrates to what extent rod stretch must be taken into consideration in determining the proper speed to get the required plunger stroke.

The cards are not as sharp ended as are obtained at still lower speeds. Approximate computations of the plunger stroke may be obtained by using the usual stretch formula, but the taking of successive cards and comparison with production data is necessary to accurately arrive at maximum production.

Underbalancing necessitates a larger prime mover, decreases power efficiency, increases rod and belt or gear stresses, and adds to the dangers of hitting fluid. It is particularly unpractical on motor drive. A speed increase has much the same effects as underbalancing, but in general better results are obtained by the latter. But speeds much above 20 strokes per minute are practically out of the question on these deep wells on account of the high stresses induced in the rods by acceleration or inertia forces. Proper balancing, together with the correct proportioning of speed and stroke, has a great deal to do with the attainment of a smooth rod action, a good plunger stroke and lowest lifting cost.

The cards shown in Figure 2, though from a well tubed to 4,250 feet, illustrates this point of balance, speed and stroke. A very irregular rod load running well over 14,000 pounds maximum at 16.5 47-inch strokes per minute, changed to a smooth load condition with a maximum of 13,000 pounds at 22 39-inch strokes per minute. Simultaneously a gain in production of 26.7 per cent was made with an increase in horsepower load at the polished rod of but 16.7 per cent.

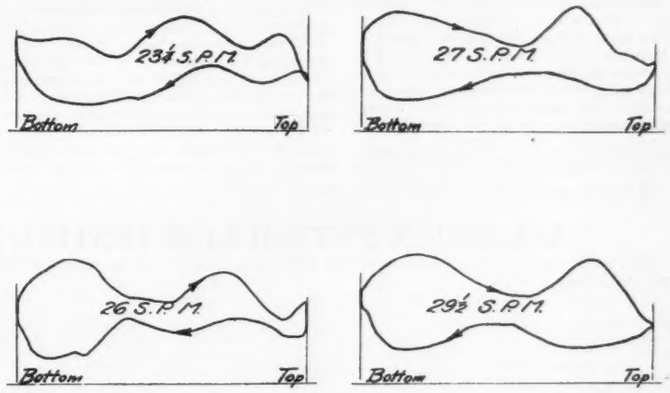


Figure 3.

The deeper the well, the more these conditions are emphasized, in their effect on the plunger motion. Shock loads in the deep wells, due to picking up the fluid load, may be absorbed by the greater flexibility of the string, but an irregular motion may be very disastrous. Hitting fluid is a different type of shock load which increases in its bad effects the deeper the well.

A comparison of the tables at the bottom shows that operation of the well at the shorter stroke at higher speed and within 10 per cent of the correct balance resulted in a higher production, and from the volumetric efficiency based on polished rod stroke, a longer plunger stroke for the same rod stroke.

Counterbalancing

Proper counterbalancing is only a mechanical problem, if we consider "proper" as meaning bringing the balance up to that indicated by the dynamometer card. In the deep well, especially when electrically pumped, balancing for minimum power is almost a necessity on account of lifting cost and the size of prime

(Continued on Page 107)

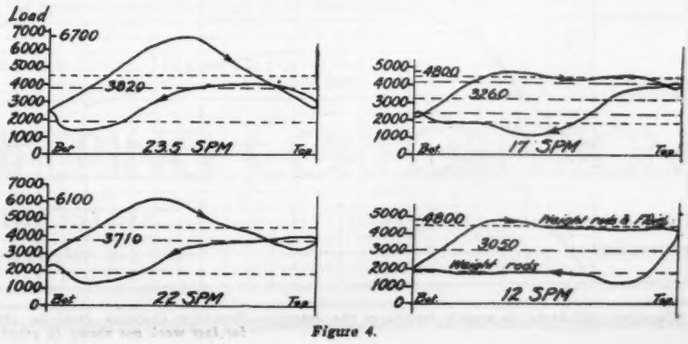


Figure 4.

[1]Assistant Production Engineer, General Petroleum Corp.
[2]Consulting Engineer, Martin-Decker Corp.

Accurate Costs As Basis for Profits

Folly of Meeting Competitor's Price in Fear of Losing Business That Can Be Secured Only by Losses

By Charles F. Abbott
Executive Director, American Institute of Steel Construction, Inc.*

A casual analysis of our industrial situation will show conclusively that in the majority of instances reasonable returns are not being obtained. Our country's most valuable possessions rest in its natural resources, valuable in peace times as well as during emergencies. Why, then, should we permit our oil, lumber, coal, cotton and mineral deposits to be taken from our preserves and disposed of at a loss or without a reasonable profit?

Today, industry is confronted with the Sherman antitrust law that is uncertain in its applications and its interpretations. Some of the restrictions were passed about 40 years ago to cover conditions existing at that time but which are now obsolete. Unsatisfactory interpretations of the present law are confusing and no doubt contribute to the failure of industry to apply proper methods of control.

Industry experienced a sign of relief in the Codes of Trade Practice suggested by the Federal Trade Commission and energetically took advantage of the opportunity only to be informed that the Department of Justice did not approve the rules in their entirety and, therefore, the Code of Trade Practice movement was thrown into a state of chaos and so far without any of the benefits that were thought possible.

Undoubtedly legislation is not alone responsible for there are many evils that should be eliminated through the initiative of each industry itself as well as by each individual through a spirit of cooperation to promote better methods and eliminate the unethical, unfair, competitive relations now altogether too disastrous to business.

Overproduction Hazards

Overproduction is one of the greatest hazards under present-day conditions. Plant capacities increased for war purposes were in excess of consumption possibilities in peace times. Many are attempting to operate at a 100 per cent capacity in the belief that mass production will solve their problems when consumption figures fall far below this capacity output. Such a condition inspires competitive rivalry and methods that are ruinous to prices and fair profits. This policy is unsound and uneconomic and against public welfare. It would seem reasonable that some change in the present legislation could be brought about in order that production could be controlled in conformity with consumption possibilities and without the destructive influences of overproduction.

The whole question is one that concerns every industry and it should be approached by a co-ordinated undertaking that would include all the interests involved. Unless initiative is assumed by industry, then it is possible that we may experience a form of regulation or governmental control in order to insure prosperity. No far-sighted business man wishes to encourage governmental interference in industry; yet if industry itself is to fail in its responsibility the government will undoubtedly insist upon some action to eliminate the deficiencies.

A manufacturer has just as much right to legal protection as has the consumer. He should be accorded as much protection from the vicious acts of his competitors as are consumers.

The thousands of industrial co-operative organizations are now in existence and are in a position through well-prepared programs and mechanism and personnel to contribute to a large extent in any undertaking designed to encourage more profitable operation. They constitute the logical leadership but under existing uncertainties they are fearful to pursue any activity that might be questioned. Their proper activities should be clearly defined, and they should be permitted to function in a constructive manner. The only practical plan to bring about the desired relief is for industry to take the initiative, co-ordinate their thoughts and requirements into a plan based upon fact-finding and then insist upon the relief that is essential to their permanency and future prosperity.

The facts are convincing. We have left the days when individuals could fight each other and prosper. We have entered a new econmic era where co-operation among competitors offers the only hope of meeting the new and changed conditions.

Owen D. Young, chairman of the board

(Continued on Page 105)

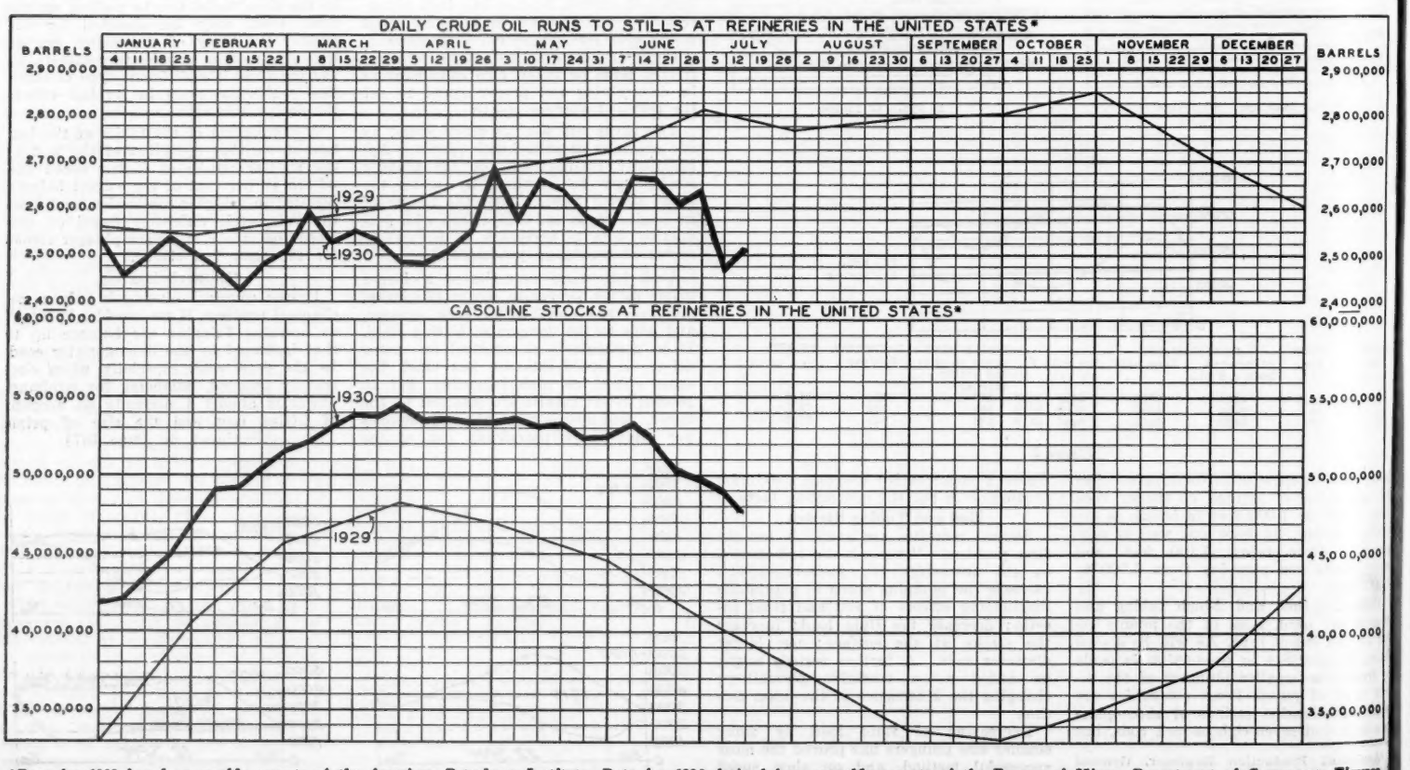
*Before Steel Founders' Society of America, White Sulphur Springs, W. Va., June 27.

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending July 19.

	Week ending July 19				Week ending July 12				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	490,400	7,601,000	9,542,000	100.0	475,000	7,743,000	9,361,000	100.0	454,857	5,998,000	7,431,000
Appalachian	91.8	86,400	1,572,000	950,000	91.8	82,900	1,589,000	924,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	99.6	309,300	7,587,000	4,242,000	99.6	317,400	7,825,000	4,267,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.9	268,600	4,009,000	4,722,000	89.9	278,600	4,189,000	4,785,000	87.7	263,428	3,604,000	3,277,000
Texas	90.4	541,700	6,747,000	10,338,000	90.4	544,900	6,982,000	10,462,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	96.8	171,400	2,082,000	1,880,000	96.8	176,100	2,191,000	1,834,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.6	59,500	2,580,000	1,197,000	93.6	62,400	2,623,000	1,199,000	93.3	41,614	2,273,000	973,000
California	99.3	518,700	13,759,000	106,242,000	99.3	573,700	14,650,000	106,253,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,446,000	45,937,000	139,113,000	95.7	2,511,000	47,792,000	139,085,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	392,900	5,582,000	7,290,000	100.0	397,600	5,860,000	7,463,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	114,900	1,709,000	1,064,000	100.0	117,400	1,812,000	1,011,000	100.0	108,514	1,877,000	3,318,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

HIGHER HEAT TRANSFER

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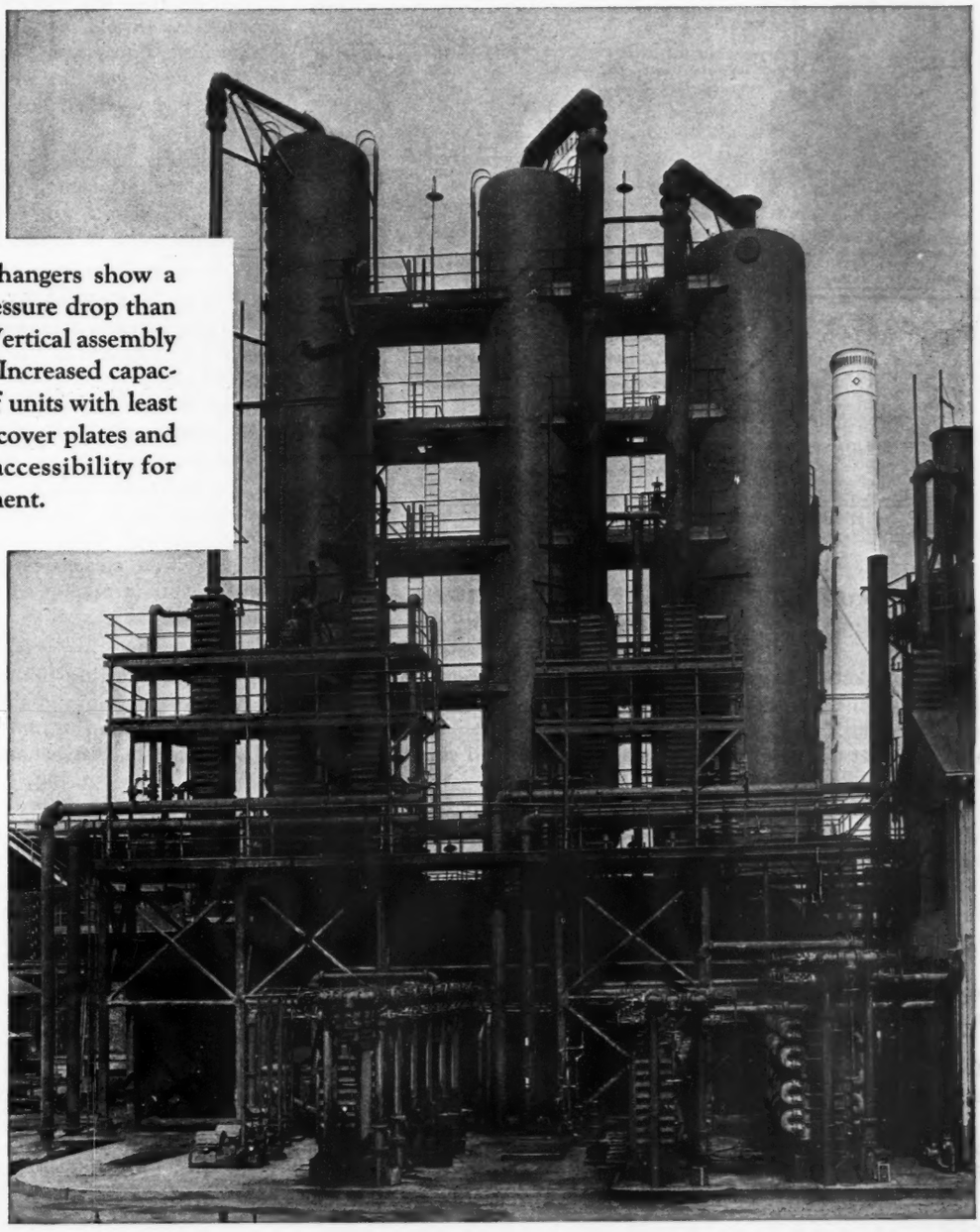

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CALLING A HALT

When North Dakota votes down a proposal to increase the tax on gasoline from three to four cents it is a warning to legislators everywhere.

North Dakota was for years an outpost of extreme radicalism, the home of the Non-Partisan League and exponent of State banks and State grain elevators. There, if anywhere, the people were ready to believe that the gasoline tax was a blow at the oil companies and therefore to be welcomed.

When these same people reject at the polls a proposal to increase that tax from three to four cents it is clear they must have found something wrong with their theory.

They have discovered that instead of hitting the oil companies they have been taxing themselves and as a result have vetoed the legislature's attempt to increase the burden.

This is believed to be the first time that voters in any state have taken enough interest in the legislative habit of increasing the tax on gasoline to call a halt.

Now that one State has set the example we may expect to hear of others taking a hand in restraining the legislative itch for more easy money.

The sugar coating on the gasoline tax pill about it being needed for building good roads is about worn off and only the bitter taste of excessive taxation remains.

The motorists of the country are contributing around a million and a half dollars a day in gasoline taxes this year, and have paid some one and three quarter billions of dollars in the past five years, more than enough, motorists will say, to have provided thousands of miles of better roads than they have to travel over.

Even with the supervisory assistance of federal aid road building in many states has been on a piecemeal basis, designed to satisfy local politics rather than provide a continuous system of improved highways.

The growing disposition at some state capitals to use the tax on gasoline for other purposes has further disillusioned the taxpayers who are far from satisfied with the results in road building and fear greater diversion of the increased revenue for general purposes.

Sooner or later this popular revulsion was bound to come. The good natured public stood for successive increases in the tax rate uncomplainingly, almost indifferently it might be said, until it became apparent there was no limit to legislative appetite.

It seemed for a time as though the tax would be increased until it reached the point where it killed itself, the point of "diminishing returns" where excessive taxation forces reduced consumption and thereby cuts down revenue.

We had that illustrated in federal taxation after the war until Secretary Mellon won his point that more reasonable taxation would bring in more revenue than extortionate taxation that handicapped business.

The gasoline tax was certainly approaching that point when it amounted to 18 to 33 per cent of the price paid by the consumer for his gasoline. Everything seemed to indicate that in a year or so the average tax on gasoline would be a nickel a gallon unless the consumers cut down their buying or halted their legislators from further increases.

The North Dakota example suggests that the popular check will take the form of curbing the legislators. This will be the better all around since it will not enforce self-denial on motorists and will be a salutary lesson to tax levying bodies.

It is only a question of popular understanding of the actual working of the gasoline tax.

It is no longer a tax on a luxury using class. Practically everybody rides nowadays and is directly interested in the cost of motoring. The motor truck and motor bus are a vital part of industry and business and an excessive tax on their fuel is shared by the public in the greater costs of transportation which necessarily enter into all prices.

The improved roads which at one time were supposed to be for those enjoying the luxury of automobiles are now seen to be an indispensable link in the national transportation system benefiting everybody. Yet our system of taxation places the cost of these roads upon the products of two industries, the automotive and oil industries.

Licenses and other taxes on cars and trucks and buses and gasoline taxes are costing the motorists of the United States a billion dollars a year, but proposals for increasing the gasoline tax rate are under consideration in nine states, West Virginia, Nebraska, Colorado, Wisconsin, Massachusetts, Georgia, Alabama, Washington and Louisiana.

In some of these the desire is simply to get as much as other states are getting, the legislative idea being that it is a mistake not to get all the taxation you can.

In others, as in Louisiana, the idea is to take advantage of the ease of gasoline taxation to help out on state projects other than roads which the voters might not approve if levied directly.

This is one of the most flagrant abuses of the gasoline tax. Levied against a class, it escapes the reprobation that would follow an attempt to impose a like increase in general taxation.

But the North Dakota vote indicates the public is getting wise. The expiration of the additional one-cent tax in Pennsylvania, levied for an emergency, without further effort to continue it indefinitely, is another hopeful sign, suggesting that the limit has been reached there at three cents. There can be hope of restraint when political candidates find it advisable to draw the gasoline tax line somewhere.

The altered mental attitude of the country since a year ago may also have an effective bearing on the whole matter. So long as there seemed to be no limit to expectations increases in costs, like the tax on gasoline, were little considered. But with a return to a saner view of life's facts there will be a demand for elimination of extravagances in taxation.

This is a factor that may make itself felt in the States where increases are now proposed. It may even go further and lead to a demand for revision downward in States where the tax is already too high.

Instead of having competition between the States in seeing which can match the other in increasing the tax on motor fuel we may eventually arrive at a reasonable uniform tax, adequate for the original purpose of building good roads without political extravagance, and with some sort of assurance that the public will get value received for the money contributed.

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Car Design and Gasoline Properties

Manufacturers Can Aid in Securing Maximum Performance in Motor Fuels. Vapor Lock Important

By Robert E. Wilson
Standard Oil Co. (Indiana)*

SECOND ARTICLE

The accompanying article is the second by Doctor Wilson discussing the most important characteristics of gasolines in relation to their performance as motor fuels. The first article appeared in the July 17 issue, page 40. A complete bibliography on the subject to which references are made in this article appeared in the July 17 issue. The discussion is concluded in this issue.

With the gradual increase of compression pressures, the antiknock value of a gasoline has become practically as important as its volatility. Knocking is not only distinctly unpleasant but results in a loss of power and may actually damage the engine if it becomes severe. The knocking tendency of present commercial gasolines constitutes, of course, the present limitation upon the compression ratio of automobile engines, which would otherwise be much higher for the sake of increased power and economy. It is therefore very important for the further development of gasoline engines that the average antiknock value of commercial and aviation gasoline be increased and also that special fuels of uniformly high antiknock value be made generally available.

In spite of the general recognition of the importance of measuring the antiknock properties of a gasoline, it is unfortunately true that there is today no generally recognized standard method for making such a test. While this present situation is unfortunate, it is not surprising in view of the extreme complexity of the problem and the fact that it is only a matter of 12 or 15 years since anyone appreciated that different gasolines were markedly different in their tendency to detonate and only about seven years since the knock rating of gasoline became a matter of commercial importance. Under the circumstances it seems worth while to outline the difficulties to be overcome and the progress which has been made to date.

At the outset it may be said that while many have attempted to estimate the antiknock value of gasoline by chemical analysis of its constituents, by the so-called aniline point (the temperature at which one volume of aniline just dissolves an equal volume of gasoline), by tests in bombs or by the measurement of oxidation rates, etc., it can be stated without question that at the present time none of these methods can be relied upon to give even an approximate indication of the relative antiknock value of a wide variety of gasolines. The one method of testing which must still be relied on is to run it in an engine under conditions which will cause some detonation.

When the antiknock value of a gasoline is determined in an engine the first serious question which arises is how to express the results. A considerable amount of work has been done with variable compression engines in which the compression ratio of the engine running on a given gasoline is increased up to a point where knocking begins, or reaches a definite low intensity, and these compression ratios (which are frequently referred to as the highest useful compression ratios) (H.U.C.R.) are used as a measuring scale for antiknock value. Somewhat similar results can be obtained by using an ordinary high-compression engine and varying and recording the throttle opening, manifold pressure, power output, or spark advance obtainable before a definite degree of knocking is encountered.

Not Uniform

The objection to all such methods of recording antiknock value is the fact that they depend first upon the particular engine used and second upon the precise condition of the engine at the moment the test is made. The first difficulty can be largely overcome by the difficult but not impossible expedient of having everyone use exactly the same design of test engine. Even under these conditions small differences in the precise setting of the valves, the momentary condition of valves and rings, spark plugs, carbon deposits, cooling surfaces, etc., have a marked effect on the results obtainable, so that the method at best is not satisfactory for making accurate and reproducible determinations of antiknock value.

Largely to get around these difficulties due to changing engine conditions, the general practice in most laboratories today is to determine antiknock by some method of matching an unknown sample with a known standard fuel, the test being made in the same engine within a few minutes of the same time, the fuels frequently being alternated so as to eliminate the effect of changing engine conditions. This solution might seem to be a simple and happy one, but unfortunately it has two fundamental difficulties which have not yet been entirely overcome. The first is the question of what standard fuel to use. Most engine laboratories have solved this to their own satisfaction by keeping a large stock of a standard gasoline which is supposed to have a stable antiknock value, but this does not solve the problem of an ultimate standard with which other standards can be compared in any laboratory. Edgar (32) has proposed the use of varying mixtures of two pure chemical compounds, one normal heptane which has a very pronounced knocking tendency and the other iso-octane which has good antiknock properties. The scarcity and high cost of these fuels is probably one factor which has prevented their general adoption, although they are used as ultimate standards in several laboratories. Heptane seems to be about the only available pure hydrocarbon which knocks badly, but for the component of high antiknock value others (33, 34) have recommended the substitution of pure benzol, toluol, or cyclohexane for the scarcer iso-octane.

A considerable number of companies compare their unknown fuels with blends of a straightrun gasoline of fairly high knocking tendency and different amounts of benzol, and terms such as "40 per cent benzol equivalent" are bruited about as if they had some definite meaning, whereas their significance necessarily depends entirely on the base gasoline with which the benzol has been blended, and no such gasoline has ever been generally standardized. Sometimes the base gasoline is stated to be "straightrun Pennsylvania gasoline," but even in this case there are marked differences between Pennsylvania gasolines due to differences in boiling range or variations in the composition of the crude. As a matter of fact the only generally recognized and widely used antiknock standard available today is the Ethyl Gasoline standard, which is based on samples of fuel sent out by the Ethyl Gasoline laboratories and duplicated by a large number of oil companies. Of course, this single standard does not provide a satisfactory rating scale for the measurement of the knocking tendency of unknown gasoline, although unknown gasolines can be and very frequently are rated in terms of the number of cubic centimeters of tetraethyl lead which is required to bring them up to match the Ethyl standard.

While this method of rating is useful and is entirely satisfactory for those who are marketing Ethyl Gasoline and who simply wish to know how much lead is required to bring a given sample up to standard, it is not an entirely satisfactory method of measurement because two gasolines may require the same amount of lead to bring them up to Ethyl standard and yet differ somewhat in their knocking tendency, or vice versa. Furthermore, this method cannot readily be used for measuring the antiknock value of certain special blending stocks whose antiknock values exceed the Ethyl standard. The obvious possibility of testing such blending stocks by adding more tetraethyl lead to the Ethyl standard is not a solution of the problem because the antiknock effect of lead added to the Ethyl standard varies greatly with the amount of lead already present in the standard—the absolutely antiknock value of each additional cubic centimeter of lead drops off rapidly as the total amount of lead present increases.

The other difficulty in determining antiknock by matching samples is the fact that two samples which match exactly under one set of engine conditions may not match under another set of engine conditions (35). It is well known that all gasolines knock worse at higher compressions or higher engine temperatures, but unfortunately the rate of change differs for different kinds of gasoline. For example, a given gasoline containing tetraethyl lead which just matches a given benzol blend tested at moderate temperatures will in general be much better than the same benzol blend tested at higher engine temperatures. This explains the necessity of testing gasolines at temperatures and compression ratios similar to those encountered in service and emphasizes the fact that antiknock testing for fuels to be used in an air-cooled aviation engine should not be carried out in the ordinary water-cooled test engine.

Factors to Consider

In matching two fuels, the question also arises as to whether two gasolines should be matched against one another at the same carbureter setting, the same mixture ratio, or the mixture ratio giving maximum detonation. Each of these methods of testing is likely to give somewhat different results, especially if the two fuels are widely different in composition—this is one objection to the use of benzol blends containing large amounts of benzol as an antiknock standard.

Other factors, such as humidity, spark intensity, kind of spark plug, engine speed, etc., may and probably generally do have some effect on the results obtained when attempting to match two fuels of quite different type. It is obvious that until the exact effect of these factors can be determined and an intelligent selection made of the best combination of all these variables it would be unwise to standardize a knock-testing method, as this would probably tie both the petroleum and automobile industries to a testing method which might not give a good measure of the real antiknock value of different types of fuel, and would inevitably retard the development and ultimate adoption of a thoroughly satisfactory method of knock testing.

Recognizing the necessity for a thorough study of all these factors, a subcommittee on methods of measuring detonation of the co-operative fuel research steering committee, has been working for about two years with the very active co-operation of the Bureau of Standards. The work to date has included surveys of the antiknock values of the different fuels available (36), surveys and comparison of different testing methods (37, 38), and the design of an improved antiknock test engine, which has been built by the Waukesha Motor Co. and is now being used for research on knock testing in about eight different laboratories (39). A progress report made by the Bureau of Standards at the January meeting of the Society of Automotive Engineers in Detroit indicates that the survey of the effect of all important variables on knock testing is well under way. Campbell, Lovell and Boyd (34) have just reported a survey of available standard fuels and Brown and Zuck (47) have recently announced the adoption of a standard testing technique. In view of all this activity, I believe we may confidently expect a satisfactory standardized method of determining antiknock, at least for automobile fuels, within another year. Meanwhile, most oil refiners are closely watching and holding substantially constant the antiknock value of both their regular and their premium grades of fuel.

Antiknock in Storage

For most straightrun and liquid-phase cracked gasolines with or without the addition of Ethyl fluid, the antiknock value is substantially constant over any reasonable period of storage, provided excessive evaporation losses are avoided. Our laboratory and others (30) have recently found, however, that certain gasolines of high antiknock value, and especially those made by vapor phase cracking, have marked tendency to lose their antiknock value on storage. It appears that this effect is due to the formation of certain knock-inducing substances, presumably peroxides, due to exposure to air; it can be prevented by the addition of certain antioxidizing agents.

It is believed that this loss in antiknock on storage accounts for many of the disputes which have arisen as to the antiknock value of this type of product and that for such products it will probably be necessary to devise an additional test which will involve heating in contact with oxygen or air for some period of time and then redetermining the antiknock value to see whether or not it is stable. As yet no standard test has been worked out for this purpose.

Tests for Gum Formation

Some gasolines, particularly those cracked under vapor phase conditions, if allowed to stand in contact with air for any considerable period of time, tend to deposit small quantities of resinous materials in the bottom of the container and will form similar gummy deposits in the gasoline tank and lines and particularly around the intake valve and in the engine where the final evaporation of the fuel takes place.

While very few commercial gasolines ever give trouble on this account, the desire to secure better antiknock values by vapor phase cracking makes this problem one of increasing importance, especially since ordinary refining methods for reducing gum generally result in reducing antiknock value as well.

For many years the only recognized

(Continued on Page 127)

*Assistant to vice president in charge of manufacturing, and head, development and patent department, Standard Oil Co. (Indiana), Chicago, Ill. Paper presented at Symposium on Developments in Automotive Materials, Detroit regional meeting, American Society for Testing Materials.

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Oklahoma Corporation Commission Puts O.K. On More Curtailment

The Oklahoma Corporation Commission, on Tuesday, July 22, approved the action of Oklahoma oil producers in voting to reduce their production by curtailment and proration to 550,000 bbls. per day, and issued an order putting the new curtailment plan into effect until September 1.

It is planned to further cut down Oklahoma City, all the pools in the Seminole area, and all new pools 25 per cent below the production allowed under the rule made effective July 1.

The potential production of Oklahoma is estimated as 1,400,523 bbls. as an average for July and 1,351,861 bbls. as an average for August, but an effort will be made to cut production to 550,000 bbls. as an average for both months as that figure represents the volume of crude the purchasing companies and pipe lines are willing to take.

FLOODING BANNED IN OHIO

COLUMBUS, Ohio, July 19.—The use of the flood method for producing oil is prohibited by Ohio statutes, according to an opinion by the attorney general, Gilbert Bettman, and the department of industrial relations, division of mines, may cause a suit to be instituted when the owner of the land or lease upon which the flood method is used does not bring suit for the recovery of penalties provided by law.

THE OIL MAN'S CALENDAR

July 25-26—Seattle, Wash., first meeting, Washington Gas and Oil Association.

August 4-9—New York, International Exposition of American Import Trade, Grand Central Palace.

September 2-4 — Toronto, Ontario, North American Gas Tax Conference, King Edward Hotel.

September 8-12 — Cincinnati, Ohio, Eightieth meeting, American Chemical Society, Hotel Gibson.

September 17—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

September 17-19—Atlantic City, N. J., National Petroleum Association, Hotel Traymore.

September 29-October 4—Pittsburgh, Pa., petroleum section, National Safety Council.

October 3—Tulsa, Okla., Board of Directors, American Petroleum Institute, Mayo Hotel.

October 4-11—Tulsa, Okla., International Petroleum Exposition and Congress.

October 6-11 — Washington, D. C., Sixth International Road Congress.

October 13-17—Atlantic City, N. J., American Gas Association Auditorium.

October 14-16 — Kansas City, Mo., convention, Big Four State Jobbers.

October 22-24—Pittsburgh, Pa., Transportation meeting, Society of Automotive Engineers.

November 2-5—St. Louis, marketing congress, Independent Oil Men of America, Statler Hotel.

November 10-13—Chicago, Eleventh annual meeting, American Petroleum Institute, Stevens Hotel.

December 1-5—Memphis, Tenn., Ninth Annual Asphalt Paving Conference, the Asphalt Paving Conference, the Asphalt Institute and Association of Asphalt Paving Technologists.

January 24-31 — Chicago, National Automobile Show.

January 24-31—Chocago, National Automobile Show.

Late Fields

NORTH LOUISIANA

SHREVEPORT, La., July 22.—Loring Oil Co.'s No. 1 Gardner, SE NE, Section 27-8-18, Sabine Parish, on the north edge of production, surprised Zwolle operators by coming in with an initial production as large as the discovery well and at the end of the first 24 hours made 3,000 bbls. clean oil from 2,327 feet, 2 feet in the chalk, through three-eighths-inch choke. Offsetting it to the east is A. H. Tarver's No. 2 Sabine State Bank, completed as a 45-bbl. pumper at 2,327 feet and half a mile west of it is Tarver's No. 1 Sabine State Bank completed as a 7-bbl. pumper at 2,680 feet.

KANSAS

The Voshell Pool in McPherson County, Kansas, was extended a half mile north by the completion of Slick, Pryor & Lockhart's No. 2 Gratton, SW cor. NW, Section 34-20-3w. The well had a 100-bbl. showing in the Viola lime at 3,393-3,443 feet, and a hole full of oil in the Wilcox sand at 3,447-50 feet, in five hours.

Watchorn Oil & Gas Co.'s No. 2 Morrison, NW cor. NE, Section 20-32-21w, Clark County, was drilling at 6,400 feet on the report of July 19. The last string of casing was set and cemented at 6,310 feet.

Vickers Petroleum Co.'s No. 1 Keys, NE cor. NW NE, Section 30-27-2, Sedgwick County, east of Wichita, in the Eastborough Pool, had Wilcox sand at 3,238-42 feet, where it flowed 5 bbls. an hour. The well extends production in the deep sand in the Eastborough Pool.

Slick, Pryor & Lockhart's No. 1 Berrick, SE cor. SW, Section 23-15-13w, in the south central part of Russell County, had the Gorham sand at 3,292-3,311 feet, where oil rose 1,200 feet in the hole and swabbed 56 bbls. the first 15 hours.

Another test is shut down near the top of the oil sand in the Schurr Pool, in Rice County. Independent Oil & Gas Co.'s No. 2 Mezger, SE cor. SW NE, Section 21-20-10w, was bottomed at 3,330 feet, and is underreaming the 6-inch casing to that depth. It will not be drilled into the pay sand until the market conditions change and a pipe line outlet is available.

MISSISSIPPI

SHREVEPORT, La., July 22.—Pearl River Oil & Gas Co.'s No. 1 Marter, SW NW, Section 12-5-1e, Rankin County, Mississippi, is reported as blowing in Monday from around 2,500 feet with an estimated 20,000,000 feet of dry gas. Six-inch was cemented at 2,498 feet. Location is half a mile west of the same company's No. 1 Littlefield completed last week with an estimated 50,000,000 feet of gas from 2,429 feet and three-eighths of a mile southeast of Love Oil & Gas Co.'s No. 1 Mendoza, which gauged 28,000,000 feet, total depth 2,447 feet. The well is the seventh successful completion on the outskirts of Jackson and the fourth in the past two weeks.

GULF COAST

HOUSTON, Tex., July 22.—The Texas Company added another producer at its Port Barre Dome, St. Landry Parish, with the completion of its No. 8 Botany Bay flowing 1,000 bbls. of pipe line oil from sandy shale at a total depth of 3,379 feet. At Vinton, Supreme Oil Co.'s No. 1 Gray came in flowing 500 bbls. daily at 2,876 feet. Wilson Broach's No. 3 Wilson at Edgerly, has been completed flowing 800 bbls. of fluid, 10 per cent water, from a depth of 3,481 feet.

At Barbers Hill, Yount Lee Oil Co.'s No. 1 Zadie Fisher, discovery well for the southwest flank, which has been pumping around 600 bbls., 30 per cent water, from sand at 6,661 feet, Sunday unexpectedly came back in flowing at the rate of 7,600 bbls. daily and Tuesday was flowing 5,000 bbls. of which 30 per cent was water. The well was completed during May and made an initial flow of around 1,300 bbls., later increasing to 3,100 bbls. but soon dropped off. Sinclair Oil & Gas Co.'s No. 7 Wilburn, southeast side of the dome, has been completed flowing 350 bbls. daily at 5,195 feet.

OKLAHOMA

Three new wells were completed in the Oklahoma City Pool Monday. Each of the new producers was estimated at 15,000 bbls. or more. Tom Slick Oil Co. and others' No. 4 Baker, NE cor. SW NW, Section 1-11-3w, in the north end of the pool, made 913 bbls. the first hour, 872 bbls. the second hour, 835 bbls. the third, and 14,681 bbls. in 19 hours and 35 minutes. The gas was estimated at 40,000,000 feet. Sand traps were used to prevent the flow of oil and mud covering the vicinity.

The second well was Cromwell-Franklin Oil Co.'s No. 23 Trosper Park, SE cor. NW, Section 12-11-3w. It was cleaned out in one hour's time and made 718 bbls. the first hour's flow, and 6,070 bbls. the first nine hours. Gas was estimated at 20,000,000 feet.

The third well was Coline Oil Co.'s No. 11 Clauer, SW cor. SE SE, Section 25-11-3w, did not clean itself until late in the day. It was turned into the tanks and made 7,258 bbls. in 14 hours. The gas was estimated at 12,000,000 feet.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Dills, SE cor. NW, Section 17-13-3w, a wildcat north of the main field at Oklahoma City, was drilling deeper at 6,740 feet. It was still showing oil and gas but not enough to make a commercial well at that depth.

Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s No. 1 Messer, SW cor., Section 32-14-3w, another wildcat test about 4 miles north of the Prairie company's test, was drilling in lime at 6,200 feet.

High Spots in Field News

ROCKY MOUNTAIN AREA
New pool opened on Byron Dome, Big Horn County, Wyoming.

NEW MEXICO
Two more big wells in Hobbs district, with eight new locations.

CALIFORNIA
Immediate future depends upon Playa Del Rey Field which is still enigma.

EAST CENTRAL TEXAS
Probability of extension of drilling north and east of Unit Plan No. 1 in Van Pool.

MISSISSIPPI
Seventh successful completion in Jackson district reported blowing in with estimated 20,000,000 feet of gas.

SOUTHWEST TEXAS
Escobas Pool, in Zapata County, offers room for 200 to 300 wells. Has 52 out of 82 operations in entire Laredo district.

NORTH LOUISIANA-ARKANSAS
Sabine Parish well surprises Zwolle operators by coming in with 3,000 bbls., offsetting 45-bbl. pumper and 7-bbl. pumper.

GULF COAST
Third well at new Lake Barre Dome. Another dome proved at geophysical prospect in Lake Grand Ecaille, Plaquemine Parish.

NORTH TEXAS AND PANHANDLE
Wichita Falls district shows great decrease in production due to curtailment. New territory northwest of Graham Pool, Young County.

WEST TEXAS
Deep Rock or Ogden Pool, Andrews County, has two disappointments. Penn Pool, Ector County, going on proration. New potential in Yates shows gain. Possibility of extension in southeastern corner of Gaines County.

EASTERN OPERATORS FAVOR CUTAILMENT

By L. H. Walter

PITTSBURGH, Pa., July 22.—A 30 per cent curtailment in production of Pennsylvania grade crude oil is necessary for the stabilization of the industry, leaders in the business declared today at the first meeting of the Pennsylvania Grade Oil Conservation Board in the William Penn Hotel, here. This reduction in output, it was held, can be brought about only through co-operation by small as well as large producers.

Forest B. Dorn of the Forest Oil Co., Bradford, was elected chairman of the Conservation Board. Other officers are Walter Reitz, Sistersville, W. Va., vice chairman, and R. J. Alexander, Oil City, secretary-treasurer.

Twenty members attended the meeting, representing the entire area in which Pennsylvania grade is produced. The purpose of the parley was declared to be the bringing about of a general understanding of the conditions believed to exist in the various districts represented.

The Conservation Board will hold its next meeting August 1, in the William Penn Hotel.

COLON PRODUCTION

NEW YORK, July 21.—Colon Development Co., Venezuelan operating subsidiary of the Colon Oil Corp., reports for the week ended July 11 production of 88,486 bbls. of crude, an average of 12,638 bbls. daily, against 92,419 bbls., or 13,203 bbls. per day, in the previous week.

SCORE CARD ON OIL PRODUCTION

Below is shown allotted average daily production in the United States, April to December, inclusive, suggested by the Committee on Economics of the Federal Oil Conservation Board, and the actual daily average production during the week ending July 19:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
California	610,000	610,750	750	.....
Oklahoma	655,000	585,750	.....	69,250
Texas	750,000	834,365	84,365	.....
Other fields	480,000	475,417	.....	4,583
Total	2,495,000	2,506,282	85,115	73,833

Net overproduction, 11,282 bbls. per day.

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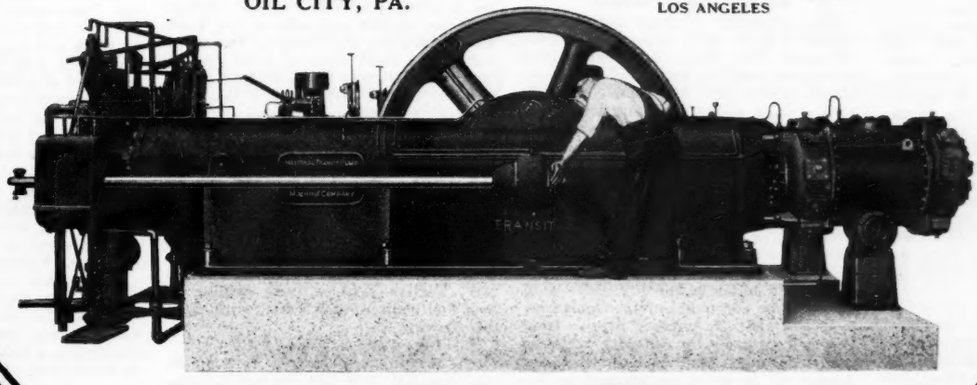

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New Gushers in Oklahoma City Field

Production of the Field and of the State Cut Deeper in Past Week and Will Suffer Further Curtailment

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

With drilling operations increasing from week to week and wells being completed at the rate of two a day in the Oklahoma City Pool, the State's estimated daily production has been cut back approximately 70,000 bbls. a day in the last two weeks. The production for the week ending July 19 was cut back approximately 30,000 bbls. a day which brings the total daily average to around 585,400 bbls. The increased curtailment has also reduced the daily average production for the Oklahoma City Pool for the same seven days to 74,100 bbls. The 14 new wells completed in the pool during the week had an initial production of around 100,000 bbls. a day but these wells were unable to produce the full 24 hours permitted new wells owing to the lack of pipe line facilities.

The announcement that the pipe line companies would cut back about 100,000 bbls. a day of the State's production making it necessary to limit the entire State's output to 550,000 bbls. a day has caused proration to be effective in almost every area where oil is produced.

The west side of the Oklahoma City Field had considerable excitement over the week end when one of the drilling tests got beyond control and blew wild for about an hour and a half. Indian Territory Illuminating Oil Co. and others' No. 1 Lloyd, SE cor. SW NW, Section 14-11-3w, found a large volume of gas and a small amount of oil at a total depth of 6,385 feet, where it blew wild for a short while. The only damage created by the well was the spraying of oil on a few nearby residences. The drill pipe was on bottom when the oil and gas started blowing. A blowout preventer was installed and the flow was successfully shut off, and the test resumed drilling.

Coline Oil Co. and Prairie Oil & Gas Co. added new producers to the West Chandler Pool in Lincoln County. Coline Oil Co.'s No. 1 Telford, NW cor. SE, Section 7-14-4, was flowing about 300 bbls. an hour from the Simpson sand at a total depth of 5,041 feet. The well was expected to be drilled about 10 feet deeper before being completed. Prairie Oil & Gas Co.'s No. 2 Norton, SW cor. NE, Section 7-14-4, was flowing 35 bbls. an hour from a total depth of 4,985 feet, in the top of the Simpson sand, and was drilling deeper.

Extend Cement Deep Area

The Cement Pool in Caddo County, in the southern part of the State, was extended a half mile west by the completion of a gas well in the deep sand. Magnolia Petroleum Co.'s No. 3 J. A. Sanes, SE cor. NE NE, Section 35-6-10w, had sand at 3,406-20 feet where it gauged 51,000,000 feet of gas and shut in. The casing was landed on top of the sand and the cement plug drilled out during the week. It appeared for a while the well would get out of control. The Magnolia company plans to use the gas for fuel at its other operation in the field.

City Drilling Controversy

The lot owners and the city commissioners have not been able to agree as to what extensions are to be made to the present drilling restrictions, inside of the city limits at Oklahoma City. At a recent meeting recommendation that the city council prohibit oil drilling north of the present limits of the drilling zone was adopted by the city planning commission Thursday, July 17, when a petition was received asking an extension as far north as Thirty-sixth Street and Eastern Avenue. Before taking this action, the commission accepted several petitions for extensions and referred them to its zoning committee. These petitions included Oliver Park and Markland Heights Additions, Industrial Addition, Shields South Oklahoma City and Higgins Heights Additions, all south of the river.

The commission also asked the zoning committee to investigate the request for drilling permits on the north strip, bounded by Euclid Avenue and Thirty-sixth Street, Eastern Avenue and Kelham Avenue, as far north as Twenty-third Street, which would make the western boundary at Jordan Avenue.

An important event at the meeting was Mayor Dean's reservation of his vote on all drilling extensions inside the city limits, indicating he might oppose virtually all of the petitions.

Permission to drill on Blocks 7, 8 and 9 of the Minnie Page addition was given to E. W. Jones and the Blackwell Oil & Gas Co. provided operations were not started until August 3, when the property will be in the drilling zone.

The planning commission recommended that no northward extensions be made in the drilling zone. It is believed the council will pass a resolution to that effect at a special meeting.

Gusher Wells Continue

The completion of huge gushers continues to be a daily occurrence in the Oklahoma City Pool. A recent survey shows the pool has a total of 745 operations, divided into 357 completed wells with a daily potential production of 1,000,000 bbls. and 388 other operations. Twenty of these are gas wells, 11 producers are being reconditioned, 64 were locations and rigging up rotary tools, 108 were drilling below 5,000 feet, 62 were drilling between 5,000 and 6,000 feet, 91 were drilling below 6,000 feet, 48 were waiting for cement and shut down.

An attempt to show that oil companies in the field adjoining the city limits were maintaining adequate safety regulations to guard the city against danger from fire will be made by the city when it goes before the state insurance board August 15 to resist an attempt to increase the rates.

The Oklahoma Inspection bureau informed the state board that it believed there was danger due to the development of oil and gas wells adjoining the city as well as inside the city limits. The majority of the oil companies in the south field have their own fire-fighting departments, and it is also understood safety regulations almost as rigid as the city's are enforced to prevent wild wells from catching fire and gas explosions. The city plans to show the board that its fire ordinance is enforced in such a manner that the fire hazard has not been increased from this source.

Cromwell-Franklin Oil Co.'s No. 2 Farley-Fuzzell, SW cor. SE NW, Section 19-11-2w, is the last well to be completed in the west half of the section. The well blew in making 1,200 bbls. the first hour. The total depth of the well was 6,333 feet, in Silicious lime. The gas was estimated at 60,000,000 feet. The well started flowing after it had been bailed down 1,000 feet.

Coline Oil Co.'s No. 7 Warren, NE cor. SW SW, Section 18-11-2w, on the east side of the field, was drilled deeper. It blew in as a producer about six months ago from a total depth of 6,350 feet, in Silicious lime, where it flowed about 15,000 bbls. a day for a few days and then went to water. It was drilled deeper to a total depth of 6,496 feet and was bailing down.

Indian Territory Illuminating Oil Co.'s No. 2 Hiddleston, NW cor. NE, Section 19-11-2w, on the east side of the field, was rigging up and running tubing to pump, at a total depth of 7,449 feet. A showing of oil was found at that depth. It is the deepest active test in the Oklahoma City Field.

Cleveland County Tests

The south end tests in Cleveland County are interesting. These tests are being watched because it is believed that some were running low on structure. Indian Territory Illuminating Oil Co.'s No. 1 M. Reynolds, NE cor. NW, Section 6-10-2w, was drilling at 6,625 feet in hard sand with nothing showing. No. 2, SE cor. NE NW, Section 6-10-2w, was drilling in lime and shale at 6,615 feet, with nothing showing.

Big Well on Edge of City

The Wrightsmith Oil Co.'s No. 1 Smith, NW cor. NW NW NE, Section 2-11-3w, in the north end of the pool, was completed and made 655 bbls. the first hour, 509 bbls. the second, 460 bbls. the third, 413 bbls. the fourth, 423 bbls. the fifth, and 413 bbls. the sixth hour, and 5,312 bbls. in 12 hours. The gas was estimated at 20,000,000 feet and the total depth of the well is 6,598 feet, in sand. The well is located on the edge of the city limits and is expected to increase drilling activities in that area.

On the extreme south end of the field the Continental Oil Co.'s No. 2 Sudik, NE cor. NW NE, Section 6-10-2w, Cleveland County, was bailing in the middle of the week. The total depth of the well was 6,744 feet in sand. It was bailed down 2,500 feet the first day, and to 3,500 feet the next day failing to make any flows. The third day the bailer was lost on one of the first trips into the hole. The crew was fishing for the lost bailer. When the bailer is recovered the test will be drilled. It has made several small flows of oil and gas.

Wirt Franklin Petroleum Corp.'s No. 1 Page, SE cor., Section 35-12-3w, in the extreme north end of the pool, has plugged back from a total depth of 6,450 feet where it had a showing of water to 6,390 feet. The casing will be landed and a production test made at the well.

Wildcat Spraying Oil

The Prairie Oil & Gas Co.'s No. 1 Dills, SE cor. NW Section 17-13-3w, a wildcat north of production in the Oklahoma City Pool, was spraying 20 bbls. a day from sandy dolomite of which 50 per cent was water. There appears to be as much salt water as oil in the output. The gas is still found in the well and is estimated at 3,500,000 feet. It is believed the Simpson sand was found at 6,708 feet, and the test was drilling at 6,737 feet. The test will be drilled to the Wilcox sand for a test.

Another wildcat test on the east side of the Oklahoma City Pool is Ryan Consolidated Petroleum Co.'s No. 1 Lawton, NE cor. NW Section 3-11-3w, which was drilling ahead at 6,825 feet, with standard tools. Nothing was showing.

The wildcat test of Mid-Kansas Oil & Gas Co., the No. 1 Messer, SW cor. Section 32-14-3w, west of Edmond, in Oklahoma County, has resumed drilling after completing a fishing job at a total depth to 6,036 feet. It was drilling at 6,050 feet.

The most southerly test in the Oklahoma City Pool, Cromwell-Franklin Oil Co.'s No. 1 Reynolds, NE cor. SW Section 6-10-2w, Cleveland County, is rigging up rotary tools to resume drilling at a total depth of 4,733 feet. The test has been shut down for several weeks and it was believed to be running too low on structure to make a producer. The operators decided to make a test on this location to determine the south end of production in the pool.

Sinclair Oil & Gas Co.'s No. 1 School Land 69, NE cor. SW Section 36-11-3w, on the southwest edge of the field, was completed as a gusher making 1,230 bbls. the first hour and 960 bbls. the second hour. Under ordinary conditions a well of this size would cause a number of new locations in the vicinity, but due to strict proration now in effect in all parts of the State the Sinclair company in all probability will not make any locations soon unless forced to do so by offsets. The well made 12,570 bbls. the first 12 hours and was then shut in on account of the lease storage being exhausted. It is the only operation in the SW of Section 36-11-3w.

Tom Slick Oil Co. and others' No. 1 Storie, NE cor. Section 2-11-3w, was completed by allowing the fluid with mud, rocks and sand to flow into a separator to prevent the surrounding territory from getting a mud bath. The well is located on the east edge of Oklahoma City, a half

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Cleaning out 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; cleaning out.

BECKHAM COUNTY

Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w	Drlg. 3,296 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,575 ft.

BLAINE COUNTY

Lowen et al's No. 1 Unknown, NW cor. SW NW Sec. 17-16-11w	Spudded and shut down.
Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 12-19-10w	Underreaming 3,550 ft.

CADDO COUNTY

Sims Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w	Rig.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w	Shut down 3,394 ft.

CHEROKEE COUNTY

Weaver & Proctor's No. 1 Benge, NE SE Sec. 8-14-21	Drlg. 80 ft.

CLEVELAND COUNTY

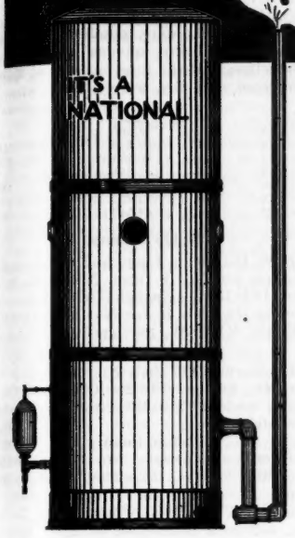
Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Drlg. 6,485 ft.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w	Shut down 3,130 ft.

COAL COUNTY

A. M. Van Orden's No. 1 Jamison, SE NW Sec. 31-1-9	Shut down 1,300 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9	Drlg. 2,160 ft.
W. E. McGraw's No. 1 King, C [illegible]	t down 3,030 ft.

(Continued on Page 97)

HOW DRY I AM



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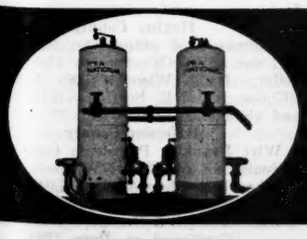

NATIONAL TANK CO.

TULSA OKLAHOMA

mile south of Fair Park. The well gauged 625 bbls. the first hour and 8,636 bbls. the first 16 hours and 15 minutes, when it was shut in on account of the lease storage being full. The gas was estimated at 35,000,000 feet, and the total depth was 6,427 feet.

Second Well in Orlando

The new Orlando Pool in western Payne County has the second Misener sand well. The Prairie Oil & Gas Co. and others' No. 1 Rule, C NW NE, Section 8-19-1w, made 1,574 bbls. the first 24 hours from the Misener sand at 4,859-64 feet. The hole filled up with oil and flowed 132 bbls. the first hour. The well was shut down for additional tankage.

Reiter-Foster Oil Corp. and others, some time ago pooled acreage in Section 5 and 8-19-1w, and drilled a test well, No. 1 Finnell, in Section 5-19-1w, which was completed in April for 65 bbls. an hour, and later prorated to 300 bbls. a day. The same operators are drilling another test, No. 2 Finnell, C SE SW, Section 5-19-1w, on this community block which is now standardizing at a total depth of 4,610 feet.

Gardner Petroleum Co., Tidal Oil Co., Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Sunray Oil Corp., and Deep Rock Oil Corp.'s No. 1 Edwards, C SE NE, Section 13-19-1w, on another pooled block of acreage, 6 miles east of the production, had a showing of oil in the Viola at 4,928 feet and was drilling at 4,965 feet. Minnehoma Oil Co.'s No. 1 Shadel, NE cor. SE NE, Section 7-19-1w, has cemented casing at 4,809 feet, and is shut down.

The new well of the Trevelyn Oil Co. in the Tatums Pool, in Carter County, has caused considerable activity in that area. The operators in the Tatums Pool have announced 11 new locations and others are being surveyed. The Trevelyn Oil Co.'s No. 1 Mitchell, SW cor. NW SE, Section 24-1s-3w, made 1,470 bbls. in 12 hours and is estimated at 2,200 bbls. in 24 hours. It is the largest well completed in that pool and is believed to be the cause of the new work.

New Work in Cement Pool

Six new locations were announced for the Cement Pool in Caddo County. Most of these new tests are the result of the Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s No. 9 Wade, SW cor. SE SW, Section 2-5-9w, on the east side of the Cement Pool, which uncovered a new sand for that area. The new well was shot near the bottom of the hole and damaged the last joint of casing, which makes cleaning out difficult. The well has not flowed since it made 287 bbls. on the gauge of July 14. It is estimated to be a 300 to 400-bbl. well when cleaned out from the sand at 4,067-78 feet, while the total depth of the well is 4,104 feet.

Greater Seminole Production

Another decline of 14,000 bbls. was registered in the production from the Greater Seminole area for the week ending July 14. This is the result of the increased proration in all parts of the State. The Seminole Field averaged 197,320 bbls. from 1,886 wells. The daily average gauges from the different pools in the Greater Seminole area were as follows:

Pool—	Wells	Bbls.
Little River	372	32,730
East Little River	82	12,850
Carr City	58	9,565
Maud	138	4,712
Mission	104	10,674
Bowlegs	280	22,129
Earlsboro	290	30,406
South Earlsboro	24	13,797
East Earlsboro	155	26,961
Seminole	266	21,042
East Seminole	33	2,799
Searight	84	9,655
Allen	267	18,211
Asher	26	1,578
Konawa	85	20,255
St. Louis	487	28,716
West Asher	11	2,074
Sasakwa	53	7,280
Total	2,815	275,434

Seminole Oil Shipments

The oil shipments recorded a 14,000-bbl. decline for the week ending July 14. The total shipments for the area were 251,205 bbls. These shipments include the tank car deliveries. The daily average shipments and tank car deliveries were as follows:

Company—	Seminole (bbls.)	Asher, Pearson, St. Louis (bbls.)	Konawa (bbls.)
Barnsdall	3,483	....	....
Champlin	8,426	....	461
Continental	428	1,058	....
Consolidated	288	....	....
Cosden	13,863	100	5,434
Deep Rock	4,231	617	....
Empire	4,908	....	....
Gulf	30,205	3,081	771
Independent	....	197	....
Magnolia	10,607	7,445	....
Oklahoma	24,396	....	487
Prairie	13,494	5,216	5,876
Prod. & Ref.	1,497	....	....
Pure	4,827	....	....
Shell	9,480	320	3,573
Sinclair	31,167	7,196	345
Texas	14,698	1,843	6,537
Tidal	12,767	3,569	....
White Oak	1,510	....	....
Total	190,257	30,642	23,424
Tank cars	6,882		
Grand total	197,139		

Oklahoma City's Shut-In Production

The initial production of the shut-in wells in the Oklahoma City Pool that have been allowed to produce for 24 hours or less as of July 19, and are now shut in for the proration period, was 632,449 bbls. The initial production and the approximate dates each well will be opened for its regular producing period follows:

I. T. I. O.:			
Sudik	*1	[1]30,000	....
Trosper Hughes	*1	[2]3,000	8- 7-30
Jones Community	*	1	8- 7-30
A. Brokaw	4	775	8- 6-30
N. Emerson	5	1,35	8- 6-30
C. Brokaw	3	11,303	8- 4-30
Theimer	*3	[3]10,540	8- 7-30
Precure	*1	[4]285	8- 7-30
Trosper	*11	4,256	8- 3-30
N. Emerson	*9	3,274	8- 7-30
L. Jones	*7	2,463	8- 7-30
M. Uncil	*2	2,050	8- 4-30
Salsman	*4	[5]225	8-14-30
M. Fuzzell	3	6,301	8-21-30
G. Button	5	[6]9,000	8-21-30
Trosper Park	*6	[7]5,000	8-21-30
E. Trosper	*1	[8]6,271	8-20-30
Jones	*10	[9]2,604	8-19-30
L. Farley	1	[10]395	8-18-30
Mary Sudik	*4	16,199	8-27-30
Canfield Button	3	6,154	8-28-30
School Land	*2	[11]4,482	8-27-30
School Land	*1	[12]4,734	8-27-30
School Land	*3	[13]7,734	9- 2-30
S. Peterson	*2	[14]6,327	9- 2-30
A. Brokaw	*3	2,855	9- 1-30
C. Trosper	*2	[15]2,385	9- 1-30
Johnson	*5	2,406	8-31-30
Farley	*1	6,408	8-30-30
Mary Sudik	*7	[16]5,169	9- 3-30
Rensimer	*1	[17]1,930	9-14-30
M. Sudik	*8	[18]8,916	9-14-30
H. G. Trosper	*1	[19]7,595	9-14-30
S. Peterson	*2	[20]7,591	9-12-30
E. Trosper	*2	[21]185	9-12-30
Theimer	*5	[22]562	9-12-30
W. Franklin:			
Theimer	*3	16,690	8- 7-30
Lowery	*8	[23]10,000	8-20-30
Wright	*1	5,805	8-27-30
Cromwell:			
Trosper Park	*17	17,953	8- 7-30
Trosper Park	*15	5,240	8-13-30
Trosper Park	*6	11,921	8-30-30
Sinclair:			
School Land 54	12	[24]12,000	8- 8-30
School Land 54	8	[25]10,000	8- 8-30
School Land 54	*3	4,420	8-13-30
School Land 54	*4	[26]9,050	8-14-30
Farley Fuzzell	2	10,865	9- 4-30
Reiter	10	115	8- 4-30
Vinci	*5	[27]5,730	8-14-30
Vinci	*3	[28]3,720	8-14-30
School Land 67	*2	6,770	8-14-30
School Land 54	7	18,000	8-30-30
Vinci	*11	31,290	8-30-30
School Land 54	*13	7,150	8-26-30
School Land 54	*10	17,220	8-30-30
School Land 67	*3	15,940	8-29-30
School Land 54	*16	[29]8,145	9- 1-30
Vinci	*9	37,075	9- 2-30
School Land 54	*6	[12]12,000	9-14-30
Vinci	*14	[30]2,225	9-13-30
Vinci	*16	[31]3,545	9-13-30
Donnell	*1	3,060	9-13-30
School Land 69	*1	[12]12,570	9- 2-30
School Land 54	*16	15,545	9- 4-30
Coline:			
Warren	9	5,544	8- 8-30
Clauer	1	[1]1,203	8- 1-30
Warren	8	9,298	8- 4-30
Olds	*10	[2]2,119	8- 2-30
Olds	*11	[1]1,284	8-15-30
Clauer	6	5,596	8-28-30
Olds	*7	[31]1,763	8-28-30
Clauer	*10	4,446	9- 1-30
Slick:			
Hoopes	*7	3,995	8- 1-30
Dunivan	*1	[11]13,482	8-15-30
Hoopes	*8	798	8-14-30
Carter	*1	[9]9,891	8-16-30
Townsend	*1	[4]4,798	8-16-30
Classen	*1	[31]1,711	8-29-30
Foote	*1	[10]10,000	8-27-30
G. Milner	*1	[32]2,924	9-14-30
Storie	*1	8,636	9- 3-30
Heenan & Co.:			
Cunningham	*2	[12]12,000	8-11-30
Mid-Texas:			
Community	*1	[2]13,000	8- 6-30
Tom Slick Oil Co.:			
Hoopes	*8	[29]572	8- 5-30
Hall & Briscoe:			
Holmes	*1	[9]9,743	7-31-30
Prairie:			
Hiddleston	9	[12]4,310	8-20-30
Jack Shaffer et al:			
Jones Community	1	2,345	8-21-30
Hall & Briscoe:			
Lindsay	2	[27]944	9- 1-30
Wrightsmith Oil Co.:			
Smith	*1	[5]5,312	9- 2-30
Total	89	632,449	

*Wells producing from the Simpson sand. All others are producing from the Arbuckle lime.

[1]Estimated. [2]Thirteen hours. [3]Nine hours, 30 minutes. [4]Twelve hours. [5]Five hours. [6]Eighteen hours. [7]Sixteen and one-half hours. [8]Seventeen hours. [9]Nineteen hours and 45 minutes. [11]Sixteen hours. [12]One hour and 15 minutes. [14]Thirteen hours and 55 minutes. [15]Sixteen hours and 15 minutes. [16]Eleven and one-half hours. [17]Fifteen hours. [18]Three hours. [19]Nineteen hours. [20]Fifteen and three-quarters hours. [21]Eighteen and one-half hours. [22]Six hours. [23]Fifteen hours and 40 minutes. [24]Fifteen and one-half hours. [25]Four hours. [26]Three hours. [27]Eleven hours and 10 minutes. [28]Seventeen hours and 30 minutes.

These notations indicate the number of hours the wells produced on their initial production test.

Oklahoma City Shipments

The shipments of oil by pipe line and tank car from the Oklahoma City Pool for the week ending July 7 total 678,764 bbls. The total recovery from the pool at the end of the same week was 26,817,700 bbls. and the total pipe line and tank car shipments have been 25,782,300 bbls., which leaves a total of 1,035,400 bbls. held in lease storage. The daily average shipments were as follows:

Company—	Total shipments	Daily averag.
Empire	192,912	27,55
I. T. I. O.	23,018	3,28
Magnolia	81,626	11,66
Oklahoma	122,783	17,54
Prairie	99,263	14,18
Sinclair	102,307	14,61
Shell	3,152	45
Tidal	53,698	7,67
Total	678,764	96,96

Actual Production

The daily gauges from the Oklahoma City Pool for the seven days ending July 21, showing the date, number of barrels produced each day, number of wells on production, and the total number of wells completed each day, were as follows:

Date—	Bbls.	Wells prod.	Total comp.
July 15	29,566	38	341
July 16	56,229	37	351
July 17	96,271	46	353
July 18	113,358	45	357
July 19	82,648	38	359
July 20	81,439	32	359
July 21	64,197	32	359

Caddo County

Shell Petroleum Corp. and others made location for No. 1 Boys, NW cor., Section 18-9-13w. English Drilling Co. is moving the tools in for No. 1 Waggoner, NE cor. NW SW, Section 12-5-9w.

Cleveland County

Continental Oil Co.'s No. 1 Sudik, NW cor. NE, Section 6-10-2w, Oklahoma City Field, made 12,713 bbls. in Wilcox sand 6,691-6,705 feet.

Cotton County

Harris & McNeal's No. 1 Mudd, NE cor. SE, Section 10-2s-10w, is ready to spud. J. B. Nantz' No. 2 Mah-Bah-Quak, NW cor. SE NW, Section 29-1s-9w, has been abandoned at 2,248 feet.

Creek County

Tom Henry and others' No. 1 Proctor, SW cor., Section 2-17-9, is drilling at 1,100 feet. Phillips Petroleum Co. and Gled Oil Co. made location for No. 4 Carter, NE cor. SE, Section 20-19-9. Phillips Petroleum Co. and Gled Oil Co. moved the machine in for No. 8 Koch, SE cor. NE, Section 20-19-9. McCullough and others made location for No. 1 Bible, NW cor. SW, Section 21-19-9. Sells & Matych's No. 1-A Bough, NW cor. SE NE, Section 22-19-9, is an old well drilling deeper at 2,410 feet. Dixie Drilling Co.'s No. 1 Helton, CNL NE NE, Section 12-17-9, is rigging up. Tel Ray Oil Corp.'s No. 1-A Baker, NE cor. NW NE, Section 14-17-10, is spudding. C. L. McMahon and Tim Wheeler staked location for No. 1 Moody, NW cor., Section 17-17-10. Chesnut & Smith's No. 1-A Rigers, C NW SE, Section 27-17-12, is drilling at 600 feet. Roxaline Oil Co.'s No. 4 Boling, NE cor. SW SW, Section 27-17-12, is a machine rigging up. Indian Territory Illuminating Oil Co.'s No. 2 Anthis, SW cor. NE SW, Section 23-19-8, has been completed for 15 bbls. in sand 2,320-70 feet. C. O. Buckles and others' No. 1-A Morgan, SE cor. NW NW, Section 14-19-9, made 150 bbls. in sand 2,165-81 feet. Phillips Petroleum Co. and Gled Oil Co.'s No. 3 Carter, CWL NW SE, Section 20-19-9, has been completed for 210 bbls. in sand 2,204-48 feet. The Prairie Oil & Gas Co.'s No. 2 Bruce, SE cor. SW, Section 10-17-9, has been completed for 40 bbls. in sand 1,988-2,014 feet. O. M. Irelan's No. 1 Baker, NE cor. SE, Section 10-17-10, is dry and abandoned at 2,570 feet. C. G. Tibbins Oil & Gas Co.'s No. 3 Baker, SE cor. NW NW, Section 18-14-9, has been completed for 22 bbls. in sand 2,288-2,322 feet. No. 2 Bartlett, NE cor. SW NW, Section 18-14-9, made 25 bbls. in sand 2,316-56 feet. J. A. Swindler and others' No. 1 Micco, SE cor. SW SW, Section 7-14-10, made 18 bbls. in sand 2,676-85 feet.

Hughes County

Gilcrease and others' No. 1 Haskett, NE cor. SW SW, Section 15-7-8, is a cellar. R. P. Wheelan's No. 1 Peters, SE cor. SW NE, Section 8-6-10, is dry and abandoned at 640 feet.

Jefferson County

Wirt Franklin Petroleum Corp.'s No. 3 Spain, SE cor. SW NW, Section 9-2s-6w, has been abandoned at 5,044 feet.

Latimer County

Limestone Oil & Gas Co.'s No. 1 Shaw,

(Continued on Page 129)

CURTAILMENT MOVEMENT SPREADS IN PENNSYLVANIA GRADE FIELDS

OIL CITY, Pa., July 18.—An agreement to curtail crude oil production 30 per cent, effective Monday, July 21, was reached at a meeting of 175 oil producers here today. Those present represented operators from northwestern Pennsylvania exclusive of the Bradford and Allegany Fields.

A comprehensive outline of the crude oil situation facing the country today was given by Forrest B. Dorn of Bradford, president of the Pennsylvania Grade Crude Oil Association, and Ralph T. Zook of Sloan & Zook, Kane.

Both Dorn and Zook declared the decline in the price of Pennsylvania crude oil calls for an immediate curtailment on the part of all operators with a view to equalizing the output and demand. The present situation is due to the vast overproduction, they stated.

Delegates to represent the various sections at a meeting in the William Penn Hotel, Pittsburgh, on Tuesday, July 22, at 1:30 p. m. (E.D.T.) were:

John W. Caldwell and J. B. Osborne, Crawford and Forest Counties; A. B. Clinger and A. W. Gold, Tioga, Warren, Potter and Elk Counties; S. Y. Ramage, David McCalmont and H. R. Panton, Venango, Clarion and Mercer Counties; C. R. Daugherty and H. H. Phillips, Lawrence, Butler and Armstrong Counties.

These delegates will confer with the Pennsylvania Grade Oil Conservation Board, already formed by Bradford and Allegany producers, in attempts to devise the best means of eliminating the evils of overproduction.

The meeting was one of the best attended and most enthusiastic held since operators started taking action to put the petroleum industry on a sound basis, according to R. J. Alexander, Oil City, secretary of the Pennsylvania Grade Crude Oil Association.

While nothing definite was done in the line of forming a working organization, representative producers of the various districts were advised to confer and elect delegates who will report at another meeting to be held in the near future.

Cut Deeper in New Pools in Kansas

Production Averaged 115,000 Bbls. in Past Week and Is Expected to Be Further Curtailed. Wildcatting Goes On

By W. A. Spinney
Staff Correspondent, Kansas Fields

A substantial reduction was recorded in Kansas production for the week ending July 19. The State's estimated daily average crude oil output for the same seven days was 115,900 bbls. The decline amounts to approximately 11,800 bbls. a day. Production is expected to show further declines the coming week in pools where it is in excess of the pipe line companies' requirements.

Some pools may be shut in by the new proration plan and others are expected to suffer by increased curtailment. The Schurr Pool, in Rice County, may be shut in without a pipe line unless immediate steps are taken to remedy the situation. The Independent Oil & Gas Co., the only purchaser of crude oil in that field, has notified the producers that July 27 will be the last day it will take oil from the field. The Independent company has been running about 50 bbls. a day from each well, making a total of 250 bbls. from the five completed wells. Officials of the company said that they do not need the oil and that it does not want to add to its storage. There is no other pipe line in this field. The Independent has been running the crude to a loading rack near the town of Raymond, where the oil has been sent in tank cars to the company's refinery at Kansas City. The five completed wells in the pool have a potential production of 7,000 bbls. a day. The two drilling tests in the area were shut down above the pay horizons. Vickers Petroleum Co.'s No. 2 Binger, NW cor. NE SE, Section 21-20-10w, in the Schurr Pool, was shut down at 3,282 feet, just above the depth the pay formation is expected. J. A. Vickers, president of the company, said the test would remain shut down until an outlet is found for crude. Independent Oil & Gas Co.'s No. 2 Mezger, SE cor. SW NE, Section 21-20-10w, in the Schurr Pool, a diagonal offset to the above test, was shut down at 3,262 feet.

Voshell Cut to 8,000 Bbls.

The Voshell Pool, in McPherson County, has suffered by additional cut backs by the pipe lines. Pipe line companies have reduced the pipe line shipments in the pool to about 8,000 bbls. a day. The field was originally curtailed to about 21,000 bbls. a day. Reduction in the amount of crude oil the companies would take resulted in reducing output to 11,000 bbls. a day. It is credited with a potential of 50,000 bbls.

Pool in Residential Section

The Derby Oil Co.'s No. 1 Eastborough, SE cor. SW NE, Section 19-27-2, has extended production in the new area east of Wichita in Sedgwick County. It is the first company to find production on the Eastborough Estates, a fashionable residence section east of the city limits of Wichita. The new well extends production a half mile north in that area from the recent gusher well completed by Fisher & Lauck. The oil was found in chat at 2,950-52 feet where it made 255 bbls. in 18 hours. The tools were lost in the hole and a fishing job resulted before a full 24 hours' gauge could be taken. The Derby Oil Co. is planning to lay a pipe line from its refinery in Wichita to connect to the well.

Wildcat Showing in Russell

Empire Oil & Refining Co.'s No. 2 Ochs, SE cor., Section 23-15-14w, Russell County wildcat, has a showing of oil at 3,275-80 feet. A production test will be made when it is drilled deeper in the pay horizon.

To Drill Short-Term Leases

The wildcat play is extending in Kansas areas. The wildcatting in different areas in the State is expected to continue with activities, despite the proration efforts and meetings to prevent flush production. Leases in a number of different areas are of the short-term variety and it will be necessary to drill on these in order to protect the companies' interests.

Shell Petroleum Corp. has a number of leases expiring in the Ritz area in McPherson County, and it will be necessary to drill several tests in Township 19-2w, McPherson County. The Shell corporation has farmed out several of these short-term leases to Tom Palmer and it is expected they will be tested in the near future. The leases are located in Section 6-20-2w, and Section 7-20-2w. The exact locations for the tests have not been announced. United Petroleum Co. and Stearns & Streeter have a short-term lease and may drill a test in Section 29-21-9w, Rice County. Another wildcat may be drilled on a block of acreage in Sedgwick County, in Sections 14, 22-23-28-1. J. H. Tatlock may drill on the Shell Petroleum Corp.'s acreage in Section 12-25-5w, Reno County, and another in Section 13-25-5w, Reno County.

New Pool in Butler

The third well is expected to be completed in the new pool northwest of Augusta, in Butler County. Tidal Oil Co.'s No. 1, SE cor. NW, Section 6-27-4, the north offset to the discovery well is due to be completed. The discovery well, Sullivan and others' No. 1 Gelwicks, which pumps 27 gravity oil, is believed to be producing from the Viola lime. The second producer in the area was Lario Oil & Gas Co.'s No. 1, Section 6-27-4, a quarter of a mile southwest of the discovery well, is rated at 100 bbls. of 27 gravity oil. The pay horizon is found at approximately 2,950 feet in the area.

Going Over Old Areas

Oil companies are working over the older areas in the eastern part of the State, by attempting to locate oil in the shallow sands. Some of the major companies have geologists at work in Greenwood County, Coffey County and Osage County, trying to locate the trends of these different areas. During the last few years several pools have been located on trends in these counties and it has led others to explore. The Patterson Pool which has yielded some good sized wells in the past is one of the active areas. Operators owning acreage in that area give indications of trying to find the trend from this pool by drilling tests in the vicinity. The Theta Oil Co. has started a new test on the Frankhouse lease, and if commercial production develops it will force other companies to drill in that area.

First reports for the past week include 22 new operations. Two of these were older wells drilling deeper. The western half of the State has 13 new operations, with nine in the eastern part, which includes the old wells drilling deeper. In Stevens County, in the southwestern part, five new tests were announced by the Argus Production Co. The other new operations were scattered in the oil producing areas.

In the older areas in Butler County, the development of the shallow sand has been in progress for some time. Empire Oil & Refining Co. has completed its No. 72 Murray, in Section 30-25-5, Butler County, for an estimated 20 bbls. a day. The sand in the test was found at 708-29 feet. These tests are drilled in a few days and are considered to be long-lived pumpers. The same company is rigging up to drill another shallow test at No. 80 Atkins in Section 20-25-5.

The Prairie Pipe Line Co. announces that construction work on a line to the Schurr Pool, in Rice County, may be delayed as the result of the overproduction situation. A petition asking that a line be built into the pool was presented to the Prairie Oil & Gas Co. recently. It was signed by The Texas Company, Independent Oil & Gas Co., Carter Oil Co., Vickers Petroleum Co., Slick, Pryor & Lockhart, Empire Oil & Refining Co., Skelly Oil Co., Gypsy Oil Co., Barnsdall Oil Co., Karl Simmons, Continental Oil Co., Braden & McClure, C. B. Davis, Allision & Fitzwilliam, J. R. Robertson and Aladdin Petroleum Corp. The Prairie company plans to extend the present line from the Voshell Pool in McPherson County to the Schurr Pool, in Rice County, a distance of about 30 miles, to connect that area with its pipe line system, at some later date.

Testing Cowley County

In the Dexter area in Cowley County interest was again active with the announcement that the Prairie Oil & Gas Co. has made a location for a new test northeast of its No. 1 Countryman. The new location will be No. 2 Countryman, NE cor. SW SE, Section 33-32-7. Oil is expected at 1,900 feet in the test. Operations in the Winfield Pool are quiet, Prairie Oil & Gas Co.'s No. 2 Zein, in Section 19-32-5, Cowley County, is the only operation drilling in that area. It was drilling at 1,500 feet on the last report.

The development in the Valley Center Pool in Sedgwick County, has been slow during the last few months. The water encroachment in that area has been unusually rapid in the last few weeks and from all indications the production has been declining. The Gypsy Oil Co. and the Continental Oil Co., according to a current report, are preparing to start several new wells on their joint holdings in the area. Some of these locations are being drilled to keep ahead of the water. There are no drilling tests in the pool now. The pool has 115 producing wells with a production of about 15,000 bbls. a day. In an attempt to extend production in the Valley Center Pool to the south, Magnolia Petroleum Co.'s No. 1 Anderson, in Section 18-26-2, Sedgwick County, was drilling at 2,800 feet.

Trees Oil Co. has a new shallow sand producer in Cowley County, which indicates a new producing area may be opened southeast of Burden. There was a possibility that a new oil pool had been found during the week by the Trees Oil Co.'s No. 3 Estus, C NE NW, Section 12-32-6, when oil showed from a shallow horizon. The test was started from the gas horizon at approximately 2,500 feet. The oil sand was found at 2,187-97 feet, where oil rose 200 feet in the hole in a short time. The company officials estimated the well at 100 bbls. a day. The other wells on the lease are gas wells in the deeper sand. The new well is located about 15 miles east of Winfield, and the oil is coming from a stray sand, which was also found in the gas wells, but it yielded only a small showing in them. The tubing rods were being installed preparatory to making a production test.

Barbara County

Barbara Oil Co.'s No. 1-B Alexander, NE cor. SW SW, Section 7-33-12w, has been abandoned at 5,112 feet.

Butler County

Empire Oil & Refining Co.'s No. 1 Crawley, NW cor. SW, Section 11-28-5, has been abandoned at 3,260 feet. P. W. Y. Oil Co.'s No. 2 Rutherford, CEL SE NW, Section 24-27-4, made a 20-bbl. well in lime 2,012-22 feet.

Coffey County

Selby & Nolan's No. 1 Eppinger, NW cor. NE NW, Section 23-22-13, is dry and abandoned at 1,900 feet.

Chautauqua County

Griffin & Bell made location for No. 8 Oliver, CSL SE SW, Section 1-32-10.

Cowley County

Mission Oil Co. is erecting the rig for No. 1 Semens, C SE SE, Section 17-31-6. The Prairie Oil & Gas Co. made location for No. 2 Countryman, NE cor. SE SW, Section 33-32-7.

Greenwood County

The Prairie Oil & Gas Co. is moving the rig in for No. 6 S. M. Newhouse, NE cor. NW NE, Section 1-24-11. Theta Oil Co.'s No. 9 Fankhouser, NW cor. SW, Section 23-22-12, has been completed for 20 bbls. in sand 1,688-1,702 feet.

Rice County

United Petroleum Corp. staked location for No. 1 Wellman, NE cor., Section 29-21-9w.

McPherson County

Tom Palmer and others moved the rig in for No. 1 Winn, NW cor. SW NW, Section 7-20-1w. Gypsy Oil Co.'s No. 1 Jacob Stuckey, SW cor. SE, Section 33-20-3w, Voshell Field, is dry and abandoned at 3,715 feet. No. 2 E. Stuckey, NE cor. SW SE, Section 33-20-3w, has been completed for 340 bbls. in Wilcox sand 3,256-88 feet. Independent Oil & Gas Co.'s No. 2 Morehouse, NW cor., Section 3-21-3w, has been completed for 650 bbls. in Wilcox sand 3,424-48 feet. Derby Oil Co.'s No. 5 Stucky, SW cor.

(Continued on Page 128)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARBER COUNTY	
Barbara Oil Co.'s No. 1 Hamblin, SW NW Sec. 24-33-13w	Shut down 4,400 ft.
Phillips Pet. Co.'s No. 1 Powell, SE cor. SE Sec. 11-33-10w	T. D. 4,265 ft.; cleaning out.
BARTON COUNTY	
Slick and Prairie's No. 1 Rude, SW cor. Sec. 11-16-13w	Drlg. 920 ft.
BUTLER COUNTY	
Pioneer Pet. Co.'s No. 1 Crist, NW SE Sec. 33-26-4	Drlg. 1,175 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Rig on ground.
Aladdin Pet. Co.'s No. 1 Metzger, NW SE Sec. 23-28-3	Drlg. 2,575 ft.
Gypsy Oil Co.'s No. 1 Osborne, NW SE Sec. 22-26-3	Drlg. 1,150 ft.
Joe Liggett's No. 1 Guanther, C SE NE NW Sec. 29-26-7	Drlg. 1,635 ft.
CLARK COUNTY	
Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w	Shut down 6,212 ft.
CLAY COUNTY	
Grisier et al's No. 1 Tivier, SW cor. Sec. 19-8-3	Shut down 50 ft.
COFFEY COUNTY	
Ritchey et al's No. 1 Rossenmacher, C SE Sec. 36-22-13	Drlg. 2,165 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Drlg. 920 ft.
COWLEY COUNTY	
Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4	Drlg. 1,565 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Drlg. 2,007 ft.
Cross' No. 1 Sanden, NE cor. Sec. 12-15-2	Rig.
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Shut down 50 ft.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4	Shut down 2,935-43 ft.; water.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1	Shut down 2,525 ft.

Now 52 Operations in Zapata County

Escobas Pool Has Flock of New Locations. Eleven Wells Completed, Initial Production of 1,470 Bbls.

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., July 21.—Laredo operators jumped into the lead in Southwest Texas the past week and completed 17 oil wells and added 1,795 bbls. initial production, most of them in the Escobas Pool in Zapata County. A flock of new locations were announced with the result that there are now 52 operations listed in Zapata County out of a total of 82 for the entire Laredo district. Pipe line runs from the Laredo district will show a substantial increase from week to week while the Escobas pool is being developed unless the unforeseen happens and dry holes bring it to a halt. About 3 miles is proved with a big gap to be filled and room for a nice little field of 200 to 300 wells at least.

The biggest well completed the past week was the Allied Gas Co.'s No. 6-A Trevino, which came in flowing 400 bbls. in Block 6, Survey 65, located 150 feet from the east and 1,050 feet from the southeast lines of the block. It is a west offset to a 100-bbl. well. Sand depth is regular with the field at 1,231-46 feet.

Eleven of the 17 wells completed in the Laredo district were in the Escobas Pool and their initial production was 1,470 bbls. out of a total of 1,795 bbls. for the entire district.

Sun Oil Co. completed a 25-bbl. well in the Albercas Pool in Webb County, the first well drilled in that field in many months. Three of the completions were in the Cole Field, one being French Oil Corp.'s No. 1-B Benavides, in the southeast corner of Survey 661 in Webb County in the new oil-producing spot in the Cole oil and gas field. The other two in that spot were by the Magnolia Petroleum Co., one being No. 3 A. Benavides for 40 bbls., 550 feet from the north and 150 feet from the east line of Survey 660, and the other No. 4 C. Benavides, 150 feet from the south and west lines of Survey 662, for 85 bbls. This makes a total of seven wells in that pool, four belonging to the Magnolia Petroleum Co. and three to French Oil Corp.

In the Killam-Cuellar Pool in Zapata County, O. W. Killam completed No. 24 Cuellar for 100 bbls. in the regular sand at 1,529-43 feet.

New Pool in Webb County

In the new pool in Webb County circling around the point where Survey Nos. 659, 660, 661 and 662 corner on each other, there are only two operators, the French Oil Corp. and Magnolia Petroleum Co. This means that there will not be many wells drilled. French has 20 acres in the southeast corner of Survey 661. Magnolia owns Surveys 660 and 662, which are the northeast and southwest of the four surveys, each of which is one section of 640 acres. French owns Survey 659, the southeast section, and 20 acres out of the southeast corner of Survey 661, which is the northwest section. There is a gas well half a mile south of the point where the four sections meet so the field is not expected to run very far south. The two companies can offset each other to the western limits of the 20 acres. They will go north to the limits of the 20 acres also. They can offset each other for a mile to the east if production extends that far. In no event is the field expected to be large unless Magnolia wants oil. It has enough acreage to drill for some distance.

The Cole oil pool, 4 miles south and a mile west, never developed more than 58 wells, but at one time the pool was producing around 3,000 bbls. of oil daily.

Escobas Production

In the Escobas Pool something more important in the way of production can be expected to more nearly parallel the Randado Pool of Jimm Hogg County which at one time from 111 wells was producing around 6,000 bbls. of oil a day. The Escobas Pool is producing from about the same depth and has already proved about the same length and width. There are no dry holes to head off the Escobas Pool on the south and it is possible for it to be much bigger than the Randado Pool.

Gasser Sprays Oil

O. W. Killam's No. 5 Bruni, a half mile southeast of the town of Bruni in Webb County, in Block 26, Survey 8, Adams Subdivision of the Mariano Arispe grant, in sand at 2,847-55 feet is making about 1,000,000 feet of gas and spraying some high gravity oil. It is coring deeper. This is the first time sand at that depth in that area has performed in that manner.

At the lower end of the Cole gas and oil area on the south edge of the O'Hern-Seacord Pool in Survey 173, 1,050 feet from the west line and 218 feet from the north line, Miller I. Shaw has made location for his No. 2 Servando Benavides about 800 feet west of his No. 1 which was dry and abandoned at 2,817 feet. Moving west gets the location more in line between producers northeast and southwest of it.

Williamson County

Very authentic reports are that there is about 14,000 bbls. of oil a day being run from the Chapman Pool in Williamson County, the oil being taken by the Sinclair and the Atlantic and shipped by tank car from Taylor, which is about 10 miles from the field. Two pipe lines run from the field, one carrying about 9,000 bbls. and the other about 5,000 bbls. daily.

This field has never got much public attention. It is owned entirely by independent operators and seems to be worthy of more notice. The production has a tinge of freakishness about it in that some wells have shown a little serpentine. However, the tests are all drilled to chalk and it is argued that if there is a serpentine plug there some test would have failed to find the chalk.

There are 53 wells in the field and they are mostly choked in to keep the production down to the figure given. The field will never be extensive according to common belief, but may cover around 400 acres. It is producing from above the chalk and presumably, therefore, from the Taylor marl; however, the formation is sandy. The shallowest tests are about 1,490 feet and the deepest about 1,990 feet. Considering the formation from which the production is coming and the depth of the wells, the size at which the wells have been reported when completed has been such that many have refused to believe the reports, but the fact seems to be that the field though it will never be large is producing quite a lot of oil and with many wells yet to be drilled.

National Gets Two

C. J. Webster of the National Oil Co. ordered out casing Friday to two wildcats, one in Medina and one in Zapata County, 135 miles apart and each on sand and looking like the opening of new pools. The Medina County test, 2 miles southeast of the Adams gas field and 5 miles northwest of Devine, had 35 feet of saturated sand at 1,610-45 feet. It is 1,000 feet from the west and south lines of the John George Survey No. 9. The Taylor marl is very sandy. It looks like it was going to open a new shallow pool.

In Zapata County about 2 miles south of the center of the north line of the county, National Oil Co.'s No. 1 Adams topped a sand at 1,170 feet and has ordered out casing. It shows a lot of gas and some oil and the owners are expecting that at about 1,500 feet in that part of the country they will get something better. This test was shut down for some time. It has had several gas sands. One at 690 feet blew out while the test was shut down waiting for water. It cleaned the hole and caught fire but the situation was satisfactorily handled by rain so that work could be resumed. With the exception of one gas well brought in near the Rio Grande, this test of the National's is west of any present production in the Laredo district and is nearly south of the old Reiser gas field in Webb County.

SOUTHWEST TEXAS

Branyon	35
Bruner	24,417
Buchanan	181
Dale	399
Darst Creek	27,354
Kingsville	119
Larremore	36
Luling	9,408
Lytton Springs	792
Manford	356
McMullen	30
Medina	22
Mirando	11,062
Pettus	5,261
Somerset	1,547
Yoast	400
Chapman	6,868
Total	88,136
Total week ending July 12	89,222
Decrease	1,037

Pettus Field

The best completion in the Pettus Field was the Barnsdall Oil Corp.'s No. 1 Roberts, a southeast offset to the Cosden discovery well west of the city. It came in for about 300 bbls. and flowed 190 bbls. the first 12 hours, but later increased and the last report was making 20 bbls. an hour.

Batex Petroleum Co.'s No. 1 Burnett, a south offset to the Cosden discovery well and west offset to the Barnsdall well, started swabbing Saturday.

Houston Oil Co.'s No. 1 Beasley, center Block 36 of the townsite, previously reported as a well and starting off at 550 bbls. daily, after two weeks' production has increased to 800 bbls. a day through a three-eighths inch choke.

Barnsdall's No. 1 Roberts was the only completion in the field the past week but Cosden Oil Co.'s Nos. 2 and 3 McKinley have each set casing, No. 2 at 3,678 feet and No. 3 at 3,655 feet. Houston Oil Co.'s No. 1 Newman has set casing at 3,683 feet. T. B. Slick's No. 1, center Block 37 of the townsite, has set casing at 3,901 feet. All of these are due to be drilled in within a few days, adding considerable production to that field.

One of the features of the field is Glasscock Brothers' No. 1, center Block 41 in the northeast corner of the townsite, which was completed some few weeks ago spraying gasoline. The owners have connected the well and are getting about 35 bbls. of water white 99 per cent pure gasoline out of the well daily of 60 gravity at 62° temperature and testing 320 endpoint. They have built one filling station and are starting to sell the gasoline and will build another if necessary.

Drilling Costs

In the Pettus Field it is costing about $25,000 to complete a flowing well and connect it to the tanks. If a pump is necessary it costs about $30,000. One of the big items of cost is around $2,000 extra for fittings due to the high pressure. The Humble's first producer in the field is still carrying 1,500 pounds

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Company, farm and location—	Remarks:
ATASCOSA COUNTY	
Frontier Oil Co.'s No. 1 Boynton, 1,900 ft. from S line, 2,700 ft. from E line of N. Flores Sur., 3 miles SW from Somerset Field	T. D. 2,590 ft.; drlg. in hard chalk.
Nute, Walder & Derden's No. 1 J. B. Young, 750 ft. W line, 370 ft. E line of 107-ac. tract in the Wm. Moore Sur.	Location.
BLANCO COUNTY	
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford No. 155	T. D. 150 ft.; set 12½-in. surface csg.
McCreary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to SE line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	Spudded in and shut down; to complete title work.
J. R. Meeks' No. 1 Walker, Noel Mixon Sur. No. 23, 3 miles N from Blanco City	T. D. 250 ft.; drlg.
BASTROP COUNTY	
Judge Batts et al's No. 1 Alexander, 1,670 ft. N of S line, 528 ft. E of W line, Blk. 3, in the W. M. Eastland Sur., 3½ miles NE from Red Rock	T. D. 2,550 ft.; shut down in shale.
Pacific Oil & Gas Co.'s No. 1 J. Spooner, 300 ft. from N line, 400 ft. from W line in the L. Lavenuz Sur., 4½ miles E from Cedar Creek	T. D. 2,125 ft.; shut down in chalk.
Pacific Oil & Gas Co.'s No. 2 Spooner, 240 ft. from W line, 4,950 ft. from S line 450-ac. tract in the L. Levering Sur., 5 miles E from Cedar Creek	T. D. 650 ft.; shut down.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 500 ft.; shut down in shale.
BROOKS COUNTY	
Houston Oil Co. of Texas' No. 1 Wormser-Holbien, 1,550 ft. S, 2,650 ft. E of intersection of Lisandro Saenz & Manuel Saenz tracts, El Palo & Blanco de Maguellas grant, SW of Lasater discovery gas	Location.
Houston Oil Co.'s No. 2 Wormser, 200 ft. N of CSL, 964-ac. tract in the P. Maguellas Sur.	T. D. 1,200 ft.; drlg.
Humble Oil & Ref. Co.-Shell Pet. Corp.'s No. 2 Wm. Singels, 1,320 ft. W of E line, 1,800 ft. S of N line of Sec. 312, Alta Verde area, 7 miles SE from Lasater gas field	T. D. 3,420 ft.; drlg. in sandy shale.
BEXAR COUNTY	
Moore-Jauer's No. 1 Holly R. Ellison	T. D. 2,110 ft.; set csg. to test sand.
Louis Wentz' No. 1 A. B. Stephens, 2,100 ft. to N line, 960 ft. to E line of 403-ac. tract in the P. W. Hays Sur., 7 miles E from San Antonio	Set surface csg.
K. M. S. Petroleum Co.'s No. 1 E. Salicky, 132 ft. from E line, 10 ft. S line of tract, Blk. 15, Mission Gardens	Location.
Morgan Bros.' No. 1 Barkmeyer, 1,650 ft. to N line, 600 ft. to W line of 600-ac. tract in the P. Villapando Sur., 8 miles SE from San Antonio	T. D. 700 ft.; shut down.

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pressure after being on production for several months. The lowest pressure is around 1,000 pounds. Wells are contracted at $3.50 a foot and the owner furnish everything. Depth is around 3,900 feet.

Dobrowolski Pool

In the Dobrowolski Pool, 8 miles southeast of San Antonio, where a shallow pool is being developed, the Swearingen and others' No. 1 Halvidier, in the J. Porego Survey No. 52, is slopping oil over the top of the casing from sand at 699-718 feet with casing set at 682 feet. It is producing from a sand in the Taylor marl and is about the best of the tests thus far completed. The owners expect it to flow when tubing is run and are now setting up tanks.

In that same part of the county, McElreath & Suggett and Wentz Oil Corp. are jointly trying to find Edwards lime production. Their No. 1 Casiano, a few miles south has been abandoned and they have moved to and spudded in the No. 1 A. B. Stephens.

Delayed Permit

R. Sarsfield Wilson and R. V. Hill, Jr., have made application for special permit to drill in the center of Blocks 14 and 16 in the Pettus Townsite. Due to the fact that one of the lot owners has refused to join in the unit operation the matter will come before the railroad commission on July 28. This delays the starting of operations on those two blocks which are in the northwestern part of the townsite.

Balcones Fault Zone

Darst Creek proration figures for the period July 1 to 16 will continue in force till August 1, according to a recent announcement. The field was gauged July 15 and proration was delayed till the pipe line companies should announce the amount of oil they would take for the last half of the month. The railroad commission had previously announced its decision based on the recent hearing at Austin that pipe lines should give notice of the amount of oil they would take and the total would be the total to be taken from the field for the period. Later it was decided to continue the proration for the first half of July through the second half and the field will be gauged again and prorated on the basis of the amount of oil the pipe lines will take.

That proration of the Darst Creek Field is an unmitigated blessing is denied by some of the operators and royalty owners who are prepared to argue that unless the restrictions on production are removed the water will ruin the field.

West of San Antonio

West of San Antonio in the Balcones fault zone the test that attracted attention other than the National Oil Co.'s No. 1 Howard was the Witherspoon Oil Co.'s No. 1 Adams in the Adams gas field which passed up the gas sand at around 950 feet and tried a test of the Edwards lime. It was got at a depth which some thought was a little high but the formation was dry at total depth of 2,122 feet.

East of San Antonio

There is some drilling around the edges of the Darst Creek Field being watched with interest but the field has lately produced no interesting information. Allen & Hager's No. 1 Bibbs on the west flank of the field proved dry and has been abandoned at 2,571 feet in the Edwards and with the Edwards high.

COMPLETIONS

Pettus Pool—Bee County

Union Production Co.'s No. 14 George Ray, 600 feet. southeast of No. 5 Ray, 250 feet northeast at right angles from south line of survey, total depth 3,956 feet, flowing 600 bbls. through three-eighth inch choke. Humble Oil & Refining Co.'s No. 4 McKinney, 1,100 feet from northwest corner, 250 feet from northeast line of the L. C. Randolph Survey, total depth 2,984 feet, 600 bbls. through three-eighth inch choke. Barnsdall Oil Co.'s No. 1 Roberts, 300 feet each way out of northwest corner of 225-acre lease in the George A. Kerr Survey, total depth 3,655 feet. estimated 300 bbls.

Jennings Cuellar—Zapata County

O. W. Killam's No. 20 "B" Cuellar, 1,430 feet south line, 3,340 feet east line, Survey 277, total depth 1,591 feet, 200 bbls. O. W. Killam's No. 21 'C" Cuellar, 847 feet east of northwest corner, 500 feet south of north line, Survey 278, total depth 1,559 feet, flow 300 bbls.

Jennings Muckelroy—Zapata County

Alamo Drilling & Leasing Co.'s No. 2 Trevino, 150 feet west line, 150 feet south line, Block 1, Survey 66, total depth 1,261 feet, estimated 75 bbls. Allied Gas Co.'s No. 4 "A" I. G. Trevino, 450 feet southwest line, 150 feet northwest line, Block 6, Survey 65, total depth 1,249 feet, flowing 150 bbls. Edgington & Niles' No. 1 "B" I. G. Trevino, 150 feet southwest line, 150 feet southeast line, Block 4, Survey 65, total depth 1,236 feet, 20,000,00 feet gas, spraying oil.

ABANDONED TESTS

Jennings-Cuellar—Zapata County

O. W. Killam's (Killam-Duggan) No. 18 "C" Cuellar, 2,804 feet southeast of corner, 150 feet southwest line, Survey 278, total depth 2,645 feet, abandoned.

Jennings-Muckelroy—Zapata County

Allied Gas Co.'s No. 3 "A" I. G. Trevino, 490 feet northwest line, 150 feet southwest line, Block 6, Survey 65, total depth 1,261 feet, plugged and abandoned.

Darst Creek—Guadalupe County

Trinity Drillers' No. 1 H. G. Goldman, 150 feet northwest line, 150 feet southwest line of 91-acre tract, J. B. Alexander Survey, total depth 2,730 feet, abandoned. Empire Gas & Fuel Co.'s No. 3 Dowdy, 792 feet north line, 150 feet east line of tract in the J. C. Darst Survey, dropped, previously reported as a completion.

NEW LOCATIONS

Jennings-Muckelroy—Zapata County

Allied Gas Co.'s No. 3 "A" I. G. Trevino, 160 feet southwest line, 565 feet northwest line, Block 6, Survey 65, total depth 800 feet, drilling. Same company's No. 5 "A" I. G. Trevino, 150 feet northwest line, 750 feet southwest line, Block 6, Survey 65, total depth 800 feet, drilling. Same company's No. 6 "A" I. G. Trevino, 150 feet east line, 1,050 feet southeast line, Block 6, Survey 65, total depth 1,230 feet, 600 bbls. S. R. C. Co.'s No. 1 "B" F. Cuellar, 150 feet, northwest line, 150 feet southwest line, Block 7, Survey 65, derrick. Edgington & Niles' No. 2 "B" I. G. Trevino, 450 feet southwest line, 150 feet southeast line, Block 4, Survey 65, spudded in.

Jennings-Cuellar—Zapata County

O. W. Killam's No. 2 A. Martinez, 2,490 feet south line, 2,490 feet west line, Survey 75, rigging up. O. W. Killam's No. 22 "B" Cuellar, 3,640 feet east line, 1,420 feet south line, Survey 277, location. O. W. Killam's No. 23 "C" Cuellar, 1,022 feet east of northwest corner, 750 feet north line, Survey 278, location.

Albercas Pool—Webb County

Sun Oil Co.'s No. 14 Yager-Strohman, 1,600 feet north line, 375 feet west line of 160-acre tract, Share 5, Las Animas grant, total depth 2,175 feet, sand 2,168-75 feet, set 6⅝-inch casing at 2,168 feet.

Carolina-Texas Pool—Webb County

Washington Texas Oil & Gas Co.'s No. 1 R. O. Barnsley, 150 feet north line, 150 feet west line, Block 16, Survey 268, location.

Schott Pool—Webb County

George S. Marshall's No. 2 Garcia, 1,170 feet north line, 2,490 feet east line, Survey 458, derrick.

Kohler Pool—Duval County

Magnolia Petroleum Co.'s No. 1 Norton, 885 feet west line, 600 feet south line, Survey 61, location.

Dobrowolski Pool—Bexar County

Eckert & Son's No. 7 Sandemer, 150 feet west line, 550 feet south line of 110-acre tract, Survey 52, location.

Buchanan Pool—Caldwell County

Buchanan-Danciger's No. 2 L. K. Brown, 300 feet north of No. 1 in the C. M. Cannon Survey, location.

Darst Creek—Guadalupe County

Dilworth Hager's (A. M. H. Oil Co.) No. 1 Bibb, 150 feet out of southeast corner of northeast 50 acres of 217-acre tract, 1,550 feet south of Penn-Tex Oil Co.'s No. 1 Roamel in the J. R. Robinson Survey, dry and abandoned at 2,571 feet. L. C. Turman's No. 2 State in the Jacob C. Darst Survey, erecting derrick.

Pettus—Bee County

Simms Oil Co.'s No. 1 Holzmark, 830 feet from southeast line, 2,952 feet from the southwest line of the J. A. York Survey, 8 miles southwest from Normanna, rigging up.

Lasater Pool—Brooks County

Ed East's No. 1 B. Garcia, 1,700 feet west, 750 feet south line of north 1,000-acre tract, Share A-1, Las Mestena y Gonzalene tract, total depth 1,109 feet, sand at 1,084-1,109 feet, tested 8,000,000 feet gas, 410 pounds pressure, being worked over.

Agua Dulce Pool—Nueces County

Saxet Oil Co.'s No. 2 Donigan, 2,150 feet due south of No. 1 Donigan, location.

DRILLING ACTIVITY

Adams Gas Field—Medina County

Witherspoon Oil Co.'s No. 1 Adams, 300 feet north line, 3,200 feet east line, P. E. Durst Survey, total depth 2,092 feet, shut down for orders.

Dobrowolski Pool—Bexar County

Penn-Tex Oil Co.'s No. 3 Sandemeyer, 300 feet west of No. 2 in the M. Menchaco Survey, spudded in.

Bruner Pool—Caldwell County

Humble Oil & Refining Co.'s No. 5 New, 450 feet south line, 1,350 feet west line of 85-acre tract in the J. Hinds Survey, total depth 2,205 feet, setting casing.

Darst Creek—Guadalupe County

Empire Gas & Fuel Co.'s No. 5 Dowdy, 792 feet north line, 150 feet east line of tract in the J. C. Darst Survey, derrick. Gulf Production Co.'s No. 2 Malear, 450 feet southwest line, 150 feet northwest line, 72-acre tract in the Jerome B. Alexander Survey, total depth 2,300 feet, drilling. Same company's No. 4 Posey, 488 feet from southwest line, 150 feet from southeast line of 71-acre tract in the J. R. Robinson Survey, location. Same company's No. 5 Posey,

(Continued on Page 126)

NEW FIELD IN VICTORIA COUNTY, TEXAS, WELL ADAPTED FOR UNIT OPERATION

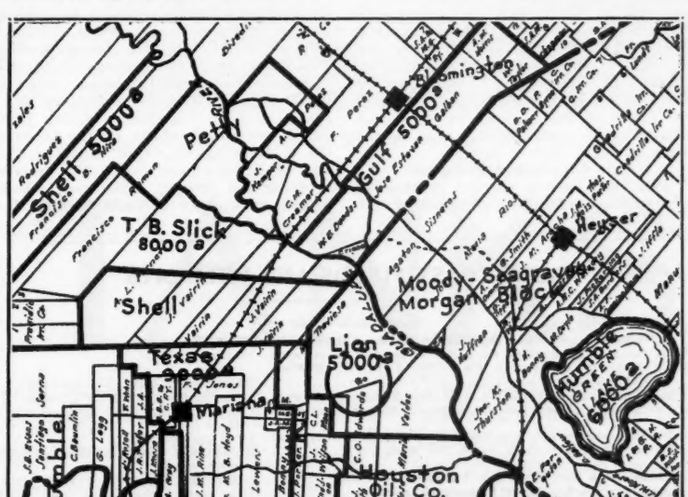
By B. D. Stevenson

SAN ANTONIO, Tex., July 21.—Lion Oil Refining Co. opened an office a few months ago in San Antonio with John O. Gibson in charge and the first test drilled was in Victoria County, a pure wildcat, and it came in a gas well opening a new field. Another test is being drilled 660 feet east of the first and there are those ready to bet that the second test will be an oil well. The first gasser was wet gas with a pressure of 1,650 pounds.

The map shows the location of the company's No. 1 McFadden in the lower part of Victoria County enclosed in a circle and shows also the Lion Oil Refining Co. block and blocks of a number of other big operators surrounding that of the Lion. The gasser is approximately 25 miles northeast of the Refugio Field and is about 30 miles southwest of the Edna Bloomington and 2,577 feet west of the NE cor. of the C. O. Edwards Survey and 514 feet north of the north line of the C. O. Edwards Survey. It was completed for 40,000,000 feet. Many expected it was going to be an oil well because of the core.

The McFadden ranch is one of the largest in the country and is located in the southern point of Victoria County between the Guadalupe River on the east and the San Antonio River on the south, the San Antonio River running into the Guadalupe River on the southern boundary of the ranch at a point just west of Green Lake.

Houston Oil Co. has a 4,000-acre lease south of that of the Lion Oil Refining Co., The Texas Company has a 9,000-acre lease out of the McFadden ranch to



Operations in Victoria County Pool.

gas field in Jackson County. Production was found in sand at about 3,740 feet, presumably the same sand that is producing in the Refugio Field at about that depth. Casing was set at 3,740 feet and total depth is 3,747 feet. Nine-inch casing was used.

The Refugio and Edna Fields are the nearest production to the new pool opened by the Lion Oil Refining Co. and the three fields and also the Agua Dulce Field in western Nueces County, 35 miles southwest of the Refugio Field, are on a line with each other and about equal distance from the coast line.

The second test by the Lion Oil Refining Co. is now drilling and it will be a few weeks before it is ready to be brought in. The first test is in the M. J. Treviesa Survey, 8 miles southwest of the west and Humble Oil & Refining Co. has a large block west of that extending south into Refugio County. Shell and T. B. Slick have blocks to the north and Gulf Production Co. has a block of 5,000 acres on the east side of the Guadalupe extending northeast, and Moody-Seagraves-Morgan have a block east of the Lion Oil Refining Co. block and east of the Guadalupe River. Humble also has a lease on the bed of Green Lake.

There never was a field better located with reference to leases for united development than the new field opened by the Lion Oil Refining Co. A large number of offsets can be drilled before the field gets outside of the 5,000 acres of the Lion Oil Refining Co. After that the acreage is pretty largely and so far as is known entirely held by major companies.

Third Well at New Lake Barre Dome

Dome Proved at Geophysical Prospect in Lake Grand Ecaille, Plaquemine Parish. Several Interesting Wildcats

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., July 21. — In the Coastal salt dome territory the past week new production was comparatively small although a third well at the new Lake Barre Dome in Terrebonne Parish, one each at Barbers Hill and Humble, and a 2,000-bbl. workover at Hull were among the completions. Of some importance was the proving of the existence of a dome at the geophysical prospect at Lake Grand Ecaille in Plaquemine. New work starting during the week includes the making of locations for the first tests on two of the most recent geophysical prospects, one near Clute in southern Brazoria County, and the other in southern Liberty County. East of Stratton Ridge, one of the oldest known domes on the Coast, location has been made for another interesting wildcat, marking the return to that dome after a long abandonment.

Chief among the completions of the week was that at Lake Barre, in the Coastal marsh land district of southern Terrebonne Parish, where The Texas Company brought in its No. 4 State-Lake Barre. This well, the fourth test drilled on the dome and the third consecutive producer, came in flowing an estimated 1,240 bbls. daily on a five-eighths-inch choke. The oil is 30 gravity. Production is from a sandy shale at a total depth of 3,660 feet, being slightly higher up on the dome than the two previous wells.

Lake Barre Dome

Lake Barre is one of the seven geophysical domes discovered by the Louisiana Land & Exploration Co. in 1928 and turned to The Texas Company for development on a working arrangement. Salt was found in the first test drilled at Lake Barre, proving the dome, this being followed by the drilling of the three producers in succession. All the seven domes except one have been proved for production, although only two, Lake Barre and Lake Pelto, at present are on the productive list. As all the domes are controlled entirely by one operator, drilling has been carried on systematically with usually only one rig being worked on each dome. The development of these seven domes simultaneously has been one of the most extensive wildcatting projects ever carried on on the Gulf Coast, and considering the remoteness of the seven domes in virgin territory in the extreme southeastern part of Louisiana, accessible only by long boat hauls, some of which are in the open waters of the Gulf of Mexico, the operations have been among the most interesting on the Coast and have required the solving of unusual engineering and development problems.

Humble Dome

Late in the week Sun Oil Co. brought in its fifth good producer in the newly developing field on the west flank of the Humble Dome, making a total of eight wells there to date. The well, No. 8 Bender, came in flowing between 1,800 and 1,900 bbls. daily of pipe line oil from a sand at a total depth of approximately 4,200 feet with casing at 4,156 feet. The well is 200 feet south of the company's No. 5, the second well in the pool, and is an offset to Rio Bravo Oil Co.'s No. 3 fee, completed two weeks ago.

The only other completions of any size on the Gulf Coast were Mills Bennett Production Co.'s No. 2 Gulf-Fisher, on the southeast side of Barbers Hill Dome, flowing 2,000 bbls. daily from sandy shale at 4,769 feet, and Republic Production Co.'s No. 44 Dolbear at Hull, flowing 2,000 bbls. of pipe line oil from sand at 2,715 feet. The latter was a former producer in another sand. Three other deep wells were completed at Barbers Hill and another at Hull but all were former wells in proved territory deepened and worked over.

Barbers Hill Wildcat

At Barbers Hill, Sun Oil Co.'s No. 1 O. K. Winfree, a rank wildcat on the west side of the dome, extended the known limits of the cap rock area of the dome a substantial distance westward by going into cap rock. Late in the week it was drilling at 4,157 feet. This wildcat, midway between the production of Humphreys Corp. on the extreme northwest side of the dome and that of Yount Lee Oil Co.'s wildcat, No. 1 Zadie Fisher, on the southwest side, determines that any continuous line of production between the northwest and the southwest flank production must run farther to the west.

Cranfill-Reynolds Oil Co. still is trying to make a well in its No. 1 Vajdak in the Esperson Field of western Liberty County. This test, at a total depth of 7,386 feet, has been swabbing around 100 bbls. daily but will not flow. This is the deepest hole in the field, whose deepest production so far is only a 3,300-3,400-foot horizon. The well is an offset location to the north of the discovery well. Yount Lee Oil Co.'s No. 1 Moores Bluff, but failed to find production in any of the other producing horizons or sands in the Esperson area. Another deep test in the Esperson area, although some distance to the north and east of the field, was abandoned with the failure of Republic Production Co.'s No. 1 Moores Bluff, G.C.&S.F. Survey No. 37, to show up for anything after drilling to 5,183 feet. Yount Lee Oil Co.'s No. 3 Moores Bluff, just north of the discovery well, and so far the second deepest hole, was drilling late in the week at 7,140 feet in shale.

New Geophysical Prospects

Two very recently checked geophysical prospects became generally known the past week when locations were made for first tests. One is in the southwestern portion of Brazoria County, near Clute and Brazoria, in what is known as the Lake Jackson district where Rycade Oil Corp. and Vacuum Oil Co. jointly have made a tentative location for No. 1 Wisdom in the J. E. Grace Survey. The other is in southern Liberty County, where Rycade Oil Corp. will drill on the Schettman tract in the John Dugan Survey. This prospect, in the John Dugan and T. Dorsett Surveys, is just a short distance to the west of the Moss Bluff Dome, and to the south of the Liberty Field.

Also of considerable interest is the wildcat location made by Rycade Oil Corp. on the east side of Stratton Ridge. The location, No. 1 Seaburn, is in the Austin & Williams Survey, 230 feet east and 4,590 feet south of the northwest corner of the survey. Stratton Ridge is one of the oldest known domes on the coast but never has been commercially productive. In 1922, a 1,000-bbl. well was completed from a 4,300-foot sand, but this lived only a few days, and later in the same year a small pumper was made but this also failed to last. With these exceptions and some other uncommercial showings, Stratton Ridge has been unproductive.

Lake Grand Ecaille

Another one of the numerous geophysical salt dome prospects discovered on the Gulf Coast within the past several years was definitely proved as a dome when a wildcat on it went into cap rock. This dome, known as Lake Grand Ecaille, is located in the northeast portion of Township 20s-26e, Plaquemine Parish, Louisiana. This is in the extreme southeastern part of coastal Louisiana, about 6 or 7 miles inland from the Gulf of Mexico. The dome was checked during 1928 and is controlled jointly by the Humble Oil & Refining Co., Gulf Refining Co. and Shell Petroleum Corp. The former is doing the drilling. The test, which went into cap rock is No. 3 Cockrell, located in Section 11. Cap rock was topped at 1,525 feet and at latest report the hole was down 1,544 feet. The first test completed on the dome was No. 1 Cockrell, Section 2, which found a shallow sand at 1,737 feet but tested salt water. A deep test, No. 1 State-Lake Washington, is drilling in sandy shale at 5,214 feet. It found a deep showing at 5,152 feet but failed to make a well. It is in Section 2. No. 2 Cockrell has not been drilled.

Gulf Refining Co. added another producer to its list of completions at Port Barre, St. Landry Parish, in its No. 3-A Hoskins, brought in earlier in the week flowing 350 bbls. daily from sandy shale at 3,334 feet. At the close of the week, its offset, The Texas Company's No. 8 Botany Bay, also had set screen and looked another well.

Daily Average Production

Daily average production of the Gulf Coast fields for the week ending July 19 was:

SOUTHEAST TEXAS

Allen	51
Barbers Hill	19,165
Batson	1,191
Big Creek	4,312
Blue Ridge	1,576
Brenham	150
Boling	1,097
Clay Creek	1,493
Damon Mound	685
DeWalt	11,991
Fannett	747
Goose Creek	4,647
Hankamer	2,373
High Island	862
Hull	8,284
Humble	18,653
Jasper County	20
Lost Lake	338
Markham	353
Moss Bluff	200
Nash	283
North Dayton	1,978
Orange	2,216
Orchard	2,378
Pierce Junction	11,668
Port Neches	1,866
Raccoon Bend	11,853
Refugio	35,366
Esperson (Sheeks)	2,489
Saratoga	1,096
Sour Lake	2,272
South Liberty	3,910
Spindletop	18,738
West Columbia	5,448
Total Southeast Texas	179,729
Total week ending July 12	174,990
Increase	4,739

SOUTH LOUISIANA

Anse La Butte	32
Bayou Blue	56
Bayou Bouillon	130
Black Bayou	575
Edgerly	558
Jennings	2,374
Hackberry	3,335
Lake Barre	1,207
Lake Pelto	127
Lockport	3,095
Port Barre	3,134
Sorrento	90
Starks	568
Sulphur	4,350
Sweet Lake	105
Vinton	4,303
Welsh	150
White Castle	1,230
Total South Louisiana	25,419
Total week ending July 12	27,978
Decrease	2,559
Total Gulf Coast	205,148
Total week ending July 12	202,968
Increase	2,180

Refugio Field

Very little of new interest materialized at Refugio in the lower coastal country during the week. The five completions failed to add any appreciable amount of new production and all but one were in the shallow 3,700-foot horizon, where a general playing out of production has been indicated by small wells and salt water holes. The one deep well, Houston Oil Co.'s No. 1-A Fannie Heard, on the eastern edge of the town lots, how-

(Continued on Page 136)

GULF COAST FIELDS AND WILDCATS

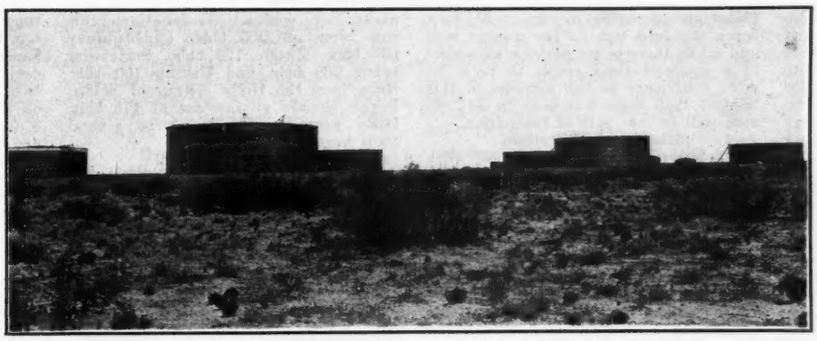
Week Ended July 19

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 10 Barrow, southwest. Fishing 4,673 ft.
Mills Bennett Production Co.'s No. 3 E. W. Barber, north. Total depth 3,242 ft.; reaming.
Mills Bennet Prod. Co.'s No. 1 Henry Fisher, southwest. Drlg. gumbo and shale 1,760 ft.
Mills Bennett Production Co.'s No. 2 Fisher, southeast. Comp. flowing 2,000 bbls. oil 4,769 ft.
Mills Bennett Prod. Co.'s No. 4 Gulf-Higgins, southeast. Drlg. gumbo 997 ft.
Humble Oil & Ref. Co.'s No. 6 fee, west. Shale and sand 5,331 ft.; drill stem stuck.
Humble Oil & Ref. Co.'s No. 7 Mayers fee, west. Standing.
Humphreys Corp.'s No. 1 Fitzgerald, north. Drlg. sandy shale and lime 1,253 ft.
Humphreys Corp.'s No. 1-B Barber, north. Drlg. lime rock 1,597 ft.
Humphreys Corp.'s No. 9-A Kirby, northwest. Drlg. shale and lime 3,198 ft.
Humphreys Corp.'s No. 8-A Barber, northwest. Drlg. shale and lime 2,409 ft.
Humphreys Corp.'s No. 8-B Kirby, northwest. Rig.
Humphreys Corp.'s No. 2 Scott. To pump.
Humphreys Corp.'s No. 2-H Kirby (workover). Drlg. shale 6,322 ft.
Humphreys Corp.'s No. 3-H Kirby (workover). Comp. pumping 80 bbls. net oil 6,182 ft.
McAlbert Oil Co. No. 1 Woodward (workover). Comp. flowing 800 bbls. 5,241 ft.
McAlbert Oil Co.'s No. 7 Woodward. Drlg. oil sand 5,335 ft.
Rio Bravo Oil Co.'s No. 1 fee, southwest. Abandoned location.
Rio Bravo Oil Co.'s No. 1 Fisher, southwest. Location.
Sinclair Oil & Gas Co.'s No. 3 McKinney fee. Shale 6,597 ft.; cem. 6¼-in. casing 6,264 ft.
Sinclair Oil & Gas Co.'s No. 5 McKinney Fee, southeast. Started drilling.
Sinclair Oil & Gas Co.'s No. 7 Wilburn, southeast. Set 10½ joints screen; swabbing 5,195 ft.
Sun Oil Co.'s No. 7 Wilburn fee, southeast. Coring sand and shale 4,568 ft.
Sun Oil Co.'s No. 8 Wilburn fee, southeast. Drlg. shale and lime 4,304 ft.
Sun Oil Co.'s No. 8 J. Wilburn, southeast. Drlg. shale and lime 4,029 ft.
Sun Oil Co.'s No. 9 J. Wilburn, southeast. Drlg. hard sand 3,621 ft.
Sun Oil Co.'s No. 6 Chambers, south. Drlg. rock 1,917 ft.
Sun Oil Co.'s No. 1 O. K. Winfree, west. Cap rock 4,167 ft.
The Texas Company's No. 4 Wilburn, southeast. Swabbing 5,149 ft.
The Texas Company's No. 1 Williams, southwest. Derrick
Yount Lee Oil Co.'s No. 11 Chambers (workover). Coring sand 4,495 ft.
Yount Lee Oil Co.'s No. 4 Phillips, southeast. Drlg. shale and lime 4,232 ft.
Yount Lee Oil Co.'s No. 8 Woodward, southeast. Drlg. sand and lime 2,626 ft.
Yount Lee Oil Co.'s No. 2 Zadie Fisher, southwest. Drlg. sand and shale 5,694 ft.; showing oil.
Yount Lee Oil Co.'s No. 5 Richardson, southwest. Abandoned in salt 5,002 ft.

(Continued on Page 124)

PITTSBURGH DES MOINES



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Louisiana-Arkansas Wildcat Shows

Oil in Holes in Bienville Parish and Miller County Shares Attention With Developments in the Mississippi Field

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., July 21.—Wildcat developments in north Louisiana and Arkansas took some of the attention Mississippi has been getting for the past two weeks during the past few days by virtue of oil shows in Bienville Parish and Miller County, and another gas well in East Carroll Parish's prospective field. And that in the face of the third big gas well in the Jackson district of Hinds County, Mississippi, in 10 days. Late in the week Nichols and others ran a test on No. 1 McDermott, Section 28-18-6, Bienville Parish, and got several feet of oil in the hole. Lenz and others' No. 1 Johnson, Section 24-15-26, Miller County, Arkansas, is claimed to have 450 feet of oil in the hole. Louisiana Gas & Fuel Co. completed No. 1 Hicks, Section 12-19-10, East Carroll Parish, making around 50,000,000 feet of dry gas. Pearl River Oil & Gas Co.'s No. 1 Little Field, Section 1-5-1e, Rankin County, Mississippi, is estimated as a 50,000,000-foot gasser and Gulf Refining Co. has completed No. 1 Rainey, Section 13-5-1e, making about 15,000,000 feet with a spray of oil. In addition to these there was quite a bit of interesting dope from the territory at large with the result that the past week has been one of more general interest than for some time.

The Bienville Parish wildcat had broken formation in the Nacatoch, sandy shale, sand and lime, from 2,181-2,253 feet total depth. Testing tool was set on top of this and is reported to have filled up one fourble with mud that had 10 to 15 feet of 35.5 gravity oil at the bottom. Location is approximately 6 miles southeast of Gibsland in the northern part of the parish and is surrounded by a dozen or more wells drilled within the past 10 or 12 years, some of which had more or less of an oil show but never developed any production. What they did do was to define a salt dome condition sufficient to warrant further exploration in the face of a succession of barren tests. Nichols and his associates are preparing to cement 6⅝-inch for a standard test on the present well and while there is no positive assurance of a producer there seems to be a bit more confidence in the outcome of this wildcat than there has been in any recent well in that part of the parish.

Mississippi Operations

Mississippi's sixth gas well, the fifth in the immediate vicinity of Jackson and the third such completion in 10 days was Pearl River Oil & Gas Co.'s No. 1 Little Field in the SE SE, Section 12-5-1e, Rankin County, just east of the State capital. Checking 114 feet higher than Gulf Refining Co.'s No. 1 Rainey 1¼ miles southwest, it has a total depth of 2,429 feet and is estimated good for 35,000,000 to 50,000,000 feet of dry gas from the chalk rock which it topped at 2,389 feet. The Gulf well, not officially a completion pending gauge for volume, has an estimated 15,000,000 feet of gas from 2,501 feet to which it was plugged back from 3,607 feet. With the gas it is making more or less mud and salt water and a spray of oil, the same mixture and volume as when it was first tested at 2,500 feet two or three months ago. Rock pressure is 450 pounds. Location for Interior Oil Co.'s No. 1 Mays in the center of the NE NE, Section 2-5-1e, Hinds County, has been abandoned. Pearl River Oil & Gas Co.'s No. 1 Marter in the NE cor. SW NW, Section 12-5-1e, topped the chalk at 2,489 feet and has cemented 6⅝-inch at that depth for a test some time during the coming week.

Gulf Refining Co. has taken 17,000 acres centering around Section 15-2-15, Clark County, Mississippi, on which it is scheduled to begin core drilling operations within 60 days and start a 3,500-foot well within four months of July 1. In Grenada County, Carter Oil Co. has checkerboarded approximately 12,000 acres in a 6½ section block surrounding Section 18-23-4e for a 4,000-foot test to be located in that section.

Daily Average Runs

Daily average runs from the field were 340 bbls. under last week's runs. Shipments from Louisiana pools totaling 39,380 bbls. were 150 bbls. less and Arkansas' total of 55,405 bbls. was 190 bbls. under last week's. Sarepta-Carterville runs were off 305 bbls., Caddo heavy 235 bbls., Zwolle 120 bbls., Smackover heavy 230 bbls. and Urbana 100 bbls. Runs from the Holly district of Sabine Parish showed an increase of 175 bbls. Daily average runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	9,595
Caddo, heavy	2,210
Homer	3,520
Haynesville	4,800
DeSoto-Red River	3,085
Elm Grove	421
Bellevue	650
Cotton Valley	2,050
Urania	5,265
Pleasant Hill	595
Sarepta-Carterville	2,915
Zwolle	2,840
Holly	1,430
Total	39,380
Last week	39,530
Decrease	150
ARKANSAS	
El Dorado	4,200
Smackover, light	5,175
Smackover, heavy	37,580
Stephens	925
Nevada County	1,000
Lisbon	960
Champagnolle	4,400
Mount Holly	100
Bradley	65
Urbana	1,000
Total	55,405
Last week	55,595
Decrease	190
Both states	94,785
Last week	95,125
Decrease	340

East Carroll Parish

Louisiana Gas & Fuel Co.'s No. 1 Hicks in Section 12-19-10, East Carroll Parish, is the fourth successful test from eight attempts in the past two or three years to find gas or oil in the East Carroll-West Carroll area 30 miles east of Monroe gas production, the four of them having a total open flow of 147,000,000 feet. The Harris well, completed at 2,340 feet, gauged 47,883,000 feet at 1,080 pounds. Tested at around 2,334 feet it made only 1,000,000 or so feet with the bottom 1 foot in the gas rock and was deepened 5 feet.

There is much difference of opinion concerning Lenz and others' No. 1 Johnson, Section 24-15-26, Miller County, Arkansas, near Garland City and 20 miles east of Texarkana. It is reported to have had 400 to 450 feet of black heavy oil testing 29 gravity in the hole from 5 feet of sand, total depth 2,867 feet, and has 6⅝-inch cemented at 2,847 feet for a test. During the past 10 or 12 years 30 or 40 wells have been drilled in southwest Arkansas within a few miles radius of the scene of Lenz' operations and this is the first to make any such show. Lenz himself has drilled eight wells south and southwest of this during the past two or three years with no oil or gas.

Caddo Wildcat

R. W. Norton's Caddo Parish wildcat in Section 33-23-16, No. 1 Hill, bailed dry at 5,315 feet after a show of gas in 40 feet of oolitic lime, and is going deeper. Result of this test was more than usually disappointing as the well had given signs of trying to blow in while drilling before setting 6⅝-inch at 5,165 feet, and considerable hope for another deep Trinity gas strike were entertained. P. T. Mize's No. 2-A Louisiana Oil Refining Corp., in Section 6-20-15, Oil City district of Caddo, made a 15-bbl. pumper, total depth 1,563 feet.

Another wildcat that is attracting particular attention is Andrews & Davlin's No. 1 Nattin, Section 15-22-14, 25 miles northeast of production in the Hosston district of Caddo. It is reported to have cored sand showing oil at 1,132 feet and shut down.

Arkansas Fuel Oil Co. got a good well in Carterville when No. 4-B Barnett in the NW NE, Section 36-23-12, was completed flowing 187 bbls. initial from 3,153 feet. Two more of the four Carterville wells also were Arkansas Fuel Oil completions. No. 1 Bain, Section 31-23-11, was a dry hole at 3,208 feet and No. 1 Ramsey, NW SE, Section 31-23-11, pumped 5 bbls. from 3,171 feet. The Texas Company's No. 1 J. W. Peyton, SW SW, Section 30-23-11, pumped 50 bbls. from 2,167 feet. Jones Chemical Co.'s No. 4 Fee, SW SE, Section 30-16-11, Elm Grove district of Bossier

(Continued on Page 136)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH—BELLEVUE

Company, farm and location—	Remarks—
H. I. Morgan's No. 5 Wetherbee, 1,120 ft. N, 200 ft. W, SE cor., Sec. 21-19-11	Cmtd. 6⅝-in. 1,805 ft; T.D. 1,811 ft.

BOSSIER PARISH CARTERVILLE

Ark. Fuel Oil Co.'s No. 2 Bain, 300 ft. S, 300 ft. E, NW cor. SW, Sec. 31-23-11	Began drlg. July 11; cmtd. 10-in. 202 ft; drlg. 2,215 ft.
Ark. Fuel Oil Co.'s (formerly Muslow Oil Co.'s) No. 1 Floyd, 990 ft. S, 330 ft. W, C, Sec. 25-23-12	W.O.S.R. 3,176 ft.
Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor. Lot 17, in Lot 16, Sec. 31-23-11	Full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.
Greenwood Prod. Co.'s No. 2 Bollinger, 990 ft. W, 330 ft. S, NE cor. NE SE, Sec. 36-23-12	Cmtd. 6⅝-in. 3,138 ft; 5-ft. sand; W.O.S.R. 3,173 ft.
Gulf Ref. Co.'s No. 1 Allums, 990 ft. N, 330 ft. W, SE cor., Sec. 36-23-12	Fishing D.S; T.D. 3,203 ft.
Magnolia Pet. Co.'s No. 2 Matlock, 330 ft. S and W, NE cor. SE SW, Sec. 25-23-12	W.O.S.R. 3,188 ft.
Magnolia Pet. Co.'s No. 3 Matlock, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 25-23-12	Cmtd. 8⅛-in. 3,132 ft; T.D. 3,179 ft; arranging to deepen.
Magnolia Pet. Co.'s No. 2 Roberson, 330 ft. S, 330 ft. E, NW cor. SW NE, Sec. 26-23-12	Swbd. 12 bbls. oil, 100 bbls. S.W. 2,941 ft; drlg. 3,058 ft.
Nat. Drlg. & Prod. Co.'s (was Lide et al's) No. 1 Matlock, 2,970 ft. S, 990 ft. E, NW cor., Sec. 26-23-12	Arranging to cmt. short string 4½-in; T.D. 3,181 ft.
Nat. Gas Prod. Co.'s No. 3 U. S. Govt., 1,520 ft. S, 2,580 ft. E, NW cor., Sec. 31-23-11	Fishing D.S; T.D. 3,160 ft.
Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 26-23-12	Derrick.
The Texas Co.'s No. 2 Hy Rose, 965 ft. E, 425 ft. N, C, Sec. 31-23-11	O.W.D.D; arranging to deepen; T. D. 3,075 ft.
The Texas Co.'s No. 12 Wilkinson, 990 ft. W, 330 ft. S, NE cor., Sec. 36-23-12	Cmtd. 6⅝-in. 3,120 ft; arranging test 3,154 ft.

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA

AVOYELLES PARISH

Company, farm and location—	Remarks—
R. E. Tippett's No. 1 Chateline, NE NE, Se. 34-1n-3e	Cored S.W; sand 3,140-47 ft; drlg. S.W. sand 3,400 ft; S.D. 3,410 ft.

BIENVILLE PARISH

Ark.-La. P. L. Co.'s No. 1 K. D. Gardner, 660 ft. S, 660 ft. W, NE cor., Sec. 22-16-10	Cmtd. 7-in. 2,066 ft.
Ark.-La. P. L. Co.'s No. 1 O. G. Thomas, 660 ft. S, 700 ft. W, NE cor. NW NE, Sec. 22-16-10	Drlg. lime 2,562 ft.
W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6	Drlg. 2,340 ft.

BOSSIER PARISH

Andrews & Davelin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	Cored oil sand 1,132 ft; S.D.
Autrey Oil Co.'s No. 1 Johnson, 1,120 ft. N, 200 ft. E, SW cor. NW, Sec. 34-19-11	Derrick.
Autrey Oil Co.'s No. 1 McDade, 200 ft. S, 200 ft. E, C, Sec. 28-19-11	Derrick.

CADDO PARISH

Falcon Oil Co.'s No. 1 Oden, NE cor. SE NE, Sec. 19-19-14	Reported June 4 dry and abd. by N. Pharis et al; O.W.D.D.; arranging to deepen; 4,409 ft.
L. B. Mawk's No. 1 Swann, 440 ft. N, 200 ft. E, SW cor., Sec. 23-21-14	S.D. for fuel; T.D. 700 ft.
R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 33-23-16	40 ft. Oolitic lime showing gas; cmtd. 6⅝-in. 5,165 ft; bailing to test, 5,315 ft; C.O.

CATAHOULA PARISH

Nick Barbee et al's No. 1 L. McGraw, 150 ft. N, 150 ft. W, SE cor. SW NW, Sec. 30-10-9	Pulled 10-in. and recmtd. at 440 ft; drlg. gumbo 990 ft.
National O. & G. Co.'s No. 1 Kirkland, 585 ft. E, 495 ft. N, SW cor., Sec. 35-9-1n	S.D. 2,412 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7	S.D. 2,240 ft.
Leue Oil Co.'s No. 1 Taylor, 1,153 ft. S, 360 ft. W, C, Sec. 16-22-6	S.D. 3,004 ft.

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Turner Valley Sets New Record in June

Deliveries Aggregated 111,960 Bbls. Increase Partly Due to New Production and to Coming Back of Wells Partly Frozen

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, July 19.—Deliveries from the Turner Valley Field for June aggregated 111,960 bbls., thus establishing a new record for the field. The previous record figure, for March, 1930, was 105,835 bbls. The June figure represented an increase over May of 27,914 bbls., the May figure being 84,046 bbls.

Deliveries to Imperial Oil, Ltd., aggregated 97,483 bbls. This figure included 64,148 bbls. of crude naphtha, against 45,847 bbls. in May; and 29,033 bbls. of discolored naphtha, against 22,314 bbls. the previous month. Light crude oil deliveries to Imperial Oil, Ltd. amounted to 4,302 bbls. Deliveries to the Regal refinery for June amounted to 14,477 bbls., also representing an increase over the previous month.

The June increase was partly due to new production, and partly to the coming back of some larger wells wholly or partly frozen off in May. New producers included Alberta Federated Oils' No. 1 (formerly Freeman-Lundy Syndicate) with 871 bbls., Alberta Pacific Consolidated's No. 1, with 242 bbls.; Mercury's No. 2 with 1,031 bbls.; and Mercury's No. 3 with 1,862 bbls. Calmont's No. 2, potentially a very large producer, made 3,096 bbls., being affected by freezing. Among the older wells, Home's No. 3 led the field with 10,527 bbls., Royalite's No. 8 coming second with 7,450 bbls.

New producers which in June had come into fairly settled production included Royalite's No. 23, with 3,015 bbls.; Freehold's No. 2 with 2,132 bbls.; Foothills' No. 3 (Southwest Petroleum) with 1,224 bbls.; Royalite's No. 19, with 3,056 bbls.; Lowery's No. 1, with 5,417 bbls.; Mayland's No. 1, with 2,506 bbls., and Model's No. 1 with 3,947 bbls. Wellington's No. 1 increased to 4,743 bbls. Royalite's No. 4, the pioneer crude naphtha gusher, which last fall appeared to pinch out, went up to 4,409 bbls.

For the first six months of 1930 the field shows a total of 556,413 bbls., an increase of 174,863 bbls. over the same period last year. Some 16 new producers have been brought in since the beginning of 1930; and approximately 25 wells are now drilling at a depth where completion can be expected this year.

Royalite Oil Co.'s aggregate production in June increased from 27,676 to 31,456 bbls.; and Home Oil Co.'s production from 19,652 to 29,366 bbls.

Imperial Drilling

Imperial Oil, Ltd. has started two new tests. Lowery Petroleum's No. 2 is rigging up in NW Section 17-19-2w5, in the south, while in the southern end of the central area, Royalite Oil Co.'s No. 25 is rigging up with rotary outfit in NW Section 31-19-2w5. Northwest-Associated's No. 2, LSD 6, Section 20-19-2w5, another of the Imperial string, got the deep lime at 4,956 feet, and cemented casing at 4,970 feet before drilling into production. This test is not far from Northwest-Associated's No. 1 which got the lime at 5,188 feet and has been in production since fall.

In the South Turner Valley, Advance Oil Co.'s No. 5-A, LSD 16, Section 19-19-2w5, was shot at 6,515 feet and is cleaning out. It was 483 feet in the lime, and may prove a small producer. Sterling Pacific Oil Co.'s No. 1, Section 33-18-2w5, was shot at 6,525 feet and is also cleaning out.

Royalite Oil Co.'s No. 11, Section 12-20-3w5, is testing production from the lime at 4,047 feet. Measured production is reported at 35,000,000 feet but rumors of 1,000 bbls. recovery are officially denied. It looks like a large producer. Royalite's No. 13, LSD 6, Section 13-20-3w5, which has been taking a small production from the lime at 4,946 feet, is preparing for a shot.

South Turner Valley

In Section 20-19-2w5, Calmont Oils' No. 2 producer, LSD 11, is installing a separator permitting back pressure up to 700 pounds, with a view to increasing crude naphtha recovery. No. 4 is drilling at 4,595 feet. Calmont's No. 8, same LSD, which has been standing at 1,602 feet, will resume as soon as the outfit from No. 2 producer is available.

In Section 4-19-2w5, Mercury Oils' No. 7 is digging cellar a short distance from No. 3 producer, in LSD 2.

Central Turner Valley

In the Central Turner Valley, Calmont Oils' No. 1, LSD 2, Section 1-20-3w5, is drilling 242 feet in the lime at 5,696 feet and in a very hard formation.

Alberta Federated Oils, Ltd. recently incorporated by the Freeman-Lundy interests, will take over not merely the Freeman-Lundy syndicate with one producing well in the central field, but other companies and acreage. It is understood these will include Lundy Petroleum, Ltd. which some time ago located a test in South Turner Valley, in LSD 4, Section 3-19-2w5.

In Section 1-20-3w5, Sioux City Oils' No. 1, LSD 10, is reported drilling 815 feet in the lime at 5,200 feet. The first and only wet gas was struck 40 feet in the lime, and the test is being deepened for larger production, with about 700 feet of crude naphtha standing in the hole. Dome Oils' No. 2, LSD 16, Section 36-19-3w5, is reported rigged up.

In Section 13-20-3w5, Spooner Oils' No. 2, LSD 14, is drilling in the Dakotas at 3,260 feet, carrying 12½-inch casing with shows of oil and gas reported.

Red Coulee Field

On the Montana end of the Red Coulee structure, Ohio Oil Co.'s No. 1, NE SW, Section 2-37-4w, is reported to have been drilled into production as a flowing well at 2,530 feet. When the sand was tapped oil rose rapidly in the casing and after running the swab the oil sprayed over the crown block and ran wild for a time. The well may be drilled a little deeper. It is a quarter mile east of Rice & Radigan's No. 1 Farbo, rated a 200-bbl. producer. No estimate has yet been given on Ohio's No. 1.

Carnegie Petroleums' No. 1, SE Section 28-36-4w, is reported drilling at 2,250 feet after running casing, and is logging high. South of Ohio's No. 1 producer, Dakota-Montana Oil Co.'s No. 1, NW Section 13-37-4w, looks like a dry hole at 2,650 feet. Alberta Pacific Consolidated's No. 2, south of Hannah-Porter's No. 1 producer, has spudded in.

Merger Oil & Gas Co. of Seattle has shipped an outfit to drill Skelly-Merger's No. 1 on a lease south of Cosmos' No. 1.

Vanalta Oils' No. 3 is being drilled on the Montana side, testing a new area west of the Kevin-Sunburst Field and east of the Cut Bank district. The Sunburst sand is expected at 1,850 feet and the Ellis contact just below 2,000 feet, and it is planned to test the lime if production is not found in the upper horizons.

On the Alberta end, Southern Alberta Exploration's No. 1, LSD 8, Section 3-1-16w4, is on the pump after deepening, with slightly increased production, which is being delivered to imperial Oil, Ltd. The well is reported to have flowed 100 bbls. a day of 30 gravity crude, free from water. No. 2 is being started just east of No. 1. Vanalta Oils' Nos. 1 and 2 have both increased production by deepening, No. 2 going up from 40 to 125 bbls.

Capitol Oil & Gas Co.'s No. 1, LSD 3, Section 21-1-16w4, 3 miles north of the Vanalta group, is reported bottoming at 2,753 feet, at the Ellis-Madison contract. C. D. McRae, managing director, says: "The well now bottoms at 2,753 feet at the Madison-Ellis contact. At this level, oil, gas and water were found. We also had oil in the Sunburst of a very high grade, the Sunburst being 30 feet in thickness. This sand was not tested at the time, but if we decide against carrying the well into the lime we will plug back and take production from the Sunburst. The oil found with the water in the Ellis was also high grade, and the water intrusion proves we are on the edge of the structure. We still have a chance for producing in the Madison and may decide to deepen the well.

"The well proves that we are on a structure that carries very high grade oil, but that we are too far to the east. We must now look for the axis of the structure which, seemingly, swings west. West we may resonably expect to find large production. We have found that we have a true sand of great thickness, carrying oil of the highest grade yet found in the Red Coulee Field, and we have a small well in the Sunburst to go back to if we do not carry the hole into the lime."

Dalco Oil & Gas Co.'s No. 1, LSD 4, Section 11-1-16w4, is rigging up to deepen from 2,615 feet, the deeper drilling being financed jointly by the Dalco company and Commonwealth Petroleum, Ltd., both of which are interested in acreage in the northeast of the field. Pacalta Oils' Ltd. is arranging for four tests by a Calgary syndicate on its Red Coulee acreage, development to be on a royalty basis.

London-Alberta Petroleums, Ltd., has been incorporated under Alberta charter and has located No. 1 test in LSD 8, Section 2-16-1w4, about three-quarters of a mile east of Southern Exploration's No. 1 producer, where the London-Al-

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TWENTY PERMITS IN MICHIGAN; TEN FOR SCATTERED WILDCATS

By Paul A. Elliott

MUSKEGON, Mich., July 21.—Twenty permits for new oil wells, a larger number than have been issued in any other two-week period since the first of the year, have been issued since July 1. Three are for wells in Muskegon County, one in the proven field and two on wildcat locations. Three are for wells in the Mount Pleasant Field and two each for promising new wildcat areas near the central Michigan field.

The other 10 permits are for wildcats scattered widely over the lower peninsula of Michigan. Six are new western Michigan wildcats located from Noble Township, Branch County, on the south near the Indiana line, to Leelanau County, north of Traverse City on the north. Three wildcats in the Mount Pleasant area and one is to be drilled in Howell Township, Livingston County, in the south central part of the State, by the Crude Oil Co. of Muskegon.

The Central Gas & Oil Co.'s No. 4 John Joldersma in the Muskegon Field has spudded in. It is located NW NE SW, Section 8-10n-16w. The two wildcats in Muskegon County are the Reed Oil Co.'s No. 1 H. Mann, NE NE, Section 29-11n-17w, Fruitland Township, and the Valek Oil Co.'s No. 1 Valek, NE SW NE, Section 3-10-16w, Muskegon Township.

The three new wells in the Mount Pleasant Field will be: Stork Oil Co.'s No. 2 Sawade and others, SW SE, Section 2-14n-3w, Chippewa Township, Isabella County; G-Lee-P Oil Development Co. and Fred Sias' No. 5 E. Grubb, SW NW SW, Section 2-14n-3w, and the same operators' No. 6 E. Grubb, NW NW SW, Section 2-14n-3w, both in Chippewa Township, Isabella County.

Two new locations were made in the vicinity of the new Leaton well in Denver Township, Isabella County. They are: Barnard J. McGee's No. 1 Danno, NE NE, Section 30-15n-3w, and E. C. Fiedler's No. 1 Roberts, NE SE SW, Section 30-15n-3w.

Two new Vernon Township wildcats near the Mellon-Pollock's No. 1 Bowman producer will be drilled on the following locations: General Petroleum Corp.'s No. 1 Pat Regan, SE NW NW, Section 26-16n-4w, and the Mellon-Pollock Oil Co.'s No. 2 Bowman and others, SW SE NE, Section 27-16n-4w.

New wildcats in western Michigan from north to south along the east shore of Lake Michigan will be drilled as follows: Clyde U. Smith, trustee's No. 1 Heimforth, NW SW, Section 6-28n-11w, Elmwood Township, Leelanau County; M. I. Diamond's No. 1 Adamczak, SW NE NW, Section 15-20n-17w, Grant Township, Mason County; Atlantic Exploration Co.'s No. 1 Bailey, SE NW, Section 9-11n-13w, Ashland Township, Newaygo County; H. P. Manion's No. 2 Tobin, SE NW SE, Section 16-2n-13w, Allegan Township, Allegan County; Gibson, Johnson & Borden, Inc.'s No. 1 Teller and others, NE NE, Section 11-8s-8w, Noble Township, Branch County, and Emil Michalski, trustee's No. 2 F. J. Wetteran, NE SW SE, Section 10-8s-21w, New Buffalo Township, Berrien County.

Two new wildcat locations near the Mount Pleasant Field are: William Cline and others' No. 1 Eddy estate, SE SE, Section 11-15n-6w, Sherman Township, Isabella County, and Mid-Bay Oil Co.'s No. 1 Patrick, E half W half NE, Section 24-14n-2e, Midland Township, Midland County. The Pinconning Oil Co.'s No. 1 Clements and others, NW NE, Section 23-17n-4e, Pinconning Township, Bay County, is fartheast east of the entire list of 20 new locations. The Crude Oil Co. of Michigan has made location for No. 1 J. Tooley, SE SE NE, Section 28-3s-4e, Howell Township, Livingston County.

Proved Fields

No new completions were reported this week either in the Muskegon or Mount Pleasant Fields. Interest at Mount Pleasant centered about the completion of Gibson, Johnson & Borden's No. 1 Lucius Cole well near Leaton. Although first reported as a 500-bbl. well and later as a 300-bbl. producer in the Dundee, No. 1 Cole, located NW NE SW, Section 19-15n-3w, Denver Township, Isabella County, finally was completed with an official initial flow of 180 bbls. Dundee was topped at 3,610 feet, pay sands at 3,652 to 3,661 feet, the total depth.

Two More Big Wells in Hobbs District

Eight New Locations Reported. New Pool Opened on Byron Dome in Big Horn County, Wyoming. Completion in Maljamar Pool

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., July 22.—The proration agreement affecting the Hobbs Pool, Lea County, New Mexico, has become effective and the executive committee is putting it into operation. Proration also has been adopted by the operators in the Maljamar and Artesia Pools. Eight new locations were announced this week and two completions were reported, a 12,000-bbl. well in the Texas Pacific Coal & Oil Co.'s No. 1-G State, on the west side of the pool, and a 10,000-bbl. well in the Ohio Oil Co.'s No. 1 State in Section 30-18-38. One completion in the Maljamar Pool, the Maljamar Oil & Gas Co.'s No. 3 Baish, was reported.

A new pool in Wyoming has been opened on the Byron Dome in Big Horn County in the Ohio Oil Co.'s No. 1 Union Gas, which is estimated at 1,000 bbls. in the Embar-Tensleep, the oil being 26 gravity and better grade than found in most of the black oil pools in that area.

The Producers & Refiners Corp.'s test on the Pole Mountain structure in Jackson County, Colorado, is flowing water. Four tests to the Pennsylvanian are getting under way on the east front of the mountain range and out in the eastern part of the State major companies have blocked up close to 1,000,000 acres.

NEW MEXICO

Of the eight new locations announced in the Hobbs Pool, four were by the Shell Petroleum Corp., two by the Humble Oil & Refining Co., and one each by the Midwest Refining Co. and the Gypsy Oil Co. The Shell locations are No. 1 Berry, SE cor., Section 31-18-38; No. 2 McKinley, SW cor. SE, Section 19-18-38; No. 3 McKinley, SE cor., Section 19-18-38, and No. 4 McKinley, SE cor. SW, Section 19-18-38. The Humble locations are No. 8 Bowers, SW cor. SE, Section 30-18-38, and No. 9 Bowers, SE SW NW, Section 29-18-38. The Midwest location is its No. 4 State, NE NW SE, Section 4-19-38. The Gypsy's No. 5 Grimes, SW cor., Section 32-18-38, is building rig.

The Empire Gas & Fuel Co.'s No. 1 Fowler, NE cor., Section 31-18-38, found the pay at 4,028-4,175 feet and it looks like a 12,000-bbl. well. It flowed 419 bbls. the first hour, 496 bbls. the second hour and 503 bbls. the third hour and showed 5 per cent basic sediment and water. It is an offset on the west to the Gypsy Oil Co.'s No. 1 Grimes and extends the proven area one location west. The Ohio Oil Co.'s No. 1 State, NE cor. SW, Section 30-18-38, was completed at 4,206 feet and is being tested. It is estimated at 10,000 bbls. per day.

Several wells heretofore reported as coming in were completed. The Amerada Petroleum Corp.'s No. 1 McKinley, NW cor., Section 30-18-38, was completed at a total depth of 4,230 feet and produced an estimated 8,500 bbls. and 5,000,000 feet of gas the first 24 hours from 4,063-4,230 feet. The elevation is 3,662 feet, top of the salt 1,660 feet, base of the salt 2,530 feet, and top of the brown lime 2,815 feet. The same company's No. 2 McKinley, SE cor. NW, Section 30-18-38, was completed at 4,030-4,208 feet for 11,000 bbls., estimated, and 10,000,000 feet of gas the first 24 hours. The elevation is 3,655 feet, top of salt 1,564 feet and bottom 2,555 feet. Texas Pacific Coal & Oil Co.'s No. 1-G State, SE cor., Section 24-18-37, the farthest west of any producer, was completed at 4,050-4,214 feet and estimated at 7,500 bbls. and 10,000,000 feet of gas the first 24 hours. The top of the salt was at 1,625 feet, base at 2,520 feet, and elevation 3,666 feet. Gypsy Oil Co.'s No. 1 Grimes, NW cor., Section 32-18-38, was estimated at 16,000 bbls. from 4,010-4,160 feet. It flowed 674 bbls. the first hour and 1,440 bbls. the first two hours with 3½ per cent basic sediment and water. The oil tested 35.7 gravity. The Humble Pipe Line Co. is taking 3,400 bbls. daily. George F. Getty, Inc.'s No. 1 McKinley, SW cor. NE, Section 30-18-38, was completed at 4,095-4,200 feet and estimated at 10,000 bbls. and 13,000,000 feet of gas the first 24 hours. It flowed 458 bbls. the first hour open. Later when opened up it flowed 353 bbls. in 30 minutes. The elevation is 3,654 feet. The top of the salt was at 1,660 feet, bottom 2,515 feet and top of the brown lime 2,770 feet. Tidal Oil Co.'s No. 1 Grimes, SW NE SE, Section 29-18-38, was completed at 4,010-4,160 feet and was estimated at 20,000 bbls. and 30,000,000 feet of gas the first 24 hours. It made 865 bbls. open flow the first hour. Subsequent tests indicated the well might make 23,000 bbls. a day initial. It is the largest in the field. The elevation is 3,647 feet. The top of the salt was at 1,700 feet, base 2,524 feet and top of brown lime 2,730 feet.

A serious accident occurred on the Texas Pacific lease when Ray Seymour was trapped in a steel tank and H. E. Powers went in to bring him out. Both were rescued in an unconscious condition and little hope is held for their recovery. Seymour started to enter the tank believing it empty and failed to hear a warning from Powers.

Drilling Operations

Landreth Production Co.'s No. 1 State, SW cor. SE, Section 7-18-38, 2 miles north of the nearest producer and an important test, is bottomed at 3,083 feet in anhydrite and lime, has recovered lost tools and recemented casing and is drilling out plug.

The California Co.'s No. 1 Grimes, NW SE SE, Section 29-18-38, is drilling at 3,784 feet. It had a show of gas at 3,668-72 feet. Same company's No. 2 State, NE SW SE, Section 29-18-38, is rigging up rotary. Continental Oil Co.'s No. 1-A State, SE NW SE, Section 29, cemented 12½-inch at 242 feet. Humble Oil & Refining Co.'s No. 3 Bowers, SW cor., Section 29, is drilling at 3,395 feet in anhydrite. Same company's No. 7 Bowers, SW cor. NW, Section 29, is shut down for orders at 2,750 feet.

Amerada Petroleum Corp.'s No. 3 McKinley, SW NW NW, Section 30-18-38, cemented 12½-inch at 230 feet in the red beds. George F. Getty, Inc.'s No. 2 McKinley, SW SE NE, Section 30, is drilling at 3,982 feet in sand and had a show of oil at 3,910-34 feet, and its No. 3 McKinley, SE cor. NE, Section 30, cemented 9⅝-inch at 2,755 feet. Same firm's No. 4 McKinley, NW cor. NE, Section 30, commenced spudding on July 9, and its No. 5 McKinley, NE cor., Section 30, is building rig. Humble Oil & Refining Co.'s No. 2-A Bowers, NW cor. SE, Section 30, is drilling at 3,693 feet in anhydrite and lime. There was an increase in gas at 3,610 feet. Humble's No. 4 Bowers, SE cor., Section 30, is drilling at 3,153 feet in anhydrite and had a show of gas at 3,045-50 feet, and its No. 5 Bowers, NW NE SE, Section 30, is drilling at 2,841 feet in anhydrite. It had a show of gas at 2,785 feet and an increase at 2,798 feet. Same company's No. 6 Bowers, NE cor. SE, Section 30, is shut down for orders at 2,750 feet. Ohio Oil Co.'s No. 1 State, NE cor. SW, Section 30, is drilling at 3,955 feet in lime. Skelly Oil Co.'s No. 1 Fowler, NW cor., Section 31-18-38, is a cellar.

Show of Gas

Amerada Petroleum Corp.'s No. 1-A State, SW NW NE, Section 32-18-38, is drilling at 3,730 feet in anhydrite and lime and had a show of gas at 3,707 feet. Gypsy Oil Co.'s No. 2 Grimes, NE SE NW, Section 32, is drilling at 2,565 feet, and its No. 3 Grimes, NE cor. SW, Section 32, is rigging up. Same company's No. 4 Grimes, NE cor. NW, Section 32, has rig up. Ohio Oil Co.'s No. 3 State-Northrup, NE cor. SE, Section 32, cemented 9⅝-inch casing on bottom at 2,748 feet, and its No. 4 State-Northrup, NW cor. SE, Section 32, is building rig. Shell Petroleum Corp.'s No. 2 State, NW SW NE, Section 32, is drilling at 3,574 feet in anhydrite and lime. Same corporation's No. 3-A State, SE cor. NE, Section 32, is drilling at 1,383 feet in anhydrite, and its No. 4 State, SW cor. NE, Section 32, is building rig.

Continental Oil Co.'s No. 1-B State, C SW SW, Section 33-18-38, cemented 12½-inch at 209 feet, and its No. 2-B State, NW cor. SW, Section 33, has rig completed. Landreth Production Co.'s No. 1-B State, SW cor. NW, Section 33, is drilling at 2,150 feet in salt.

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, considerably east of production, is bottomed at 3,112 feet in anhydrite and fishing for tools. It had shows of gas at 3,087, 3,105 and 3,112 feet. It topped brown lime at 3,075 feet; elevation is 3,609 feet. Texas Production Co.'s No. 1-C State, NE cor., Section 25-18-37, cemented 7-inch at 3,978 feet. It had some gas at 3,940 and 3,960-63 feet.

Midwest Refining Co.'s No. 33 Byers, SE SW NE, Section 4-19-38, is drilling at 3,660 feet in anhydrite, and its No. 33 State, SE SW NW, Section 4, is drilling at 1,060 feet in the red beds. Same company's No. 8 State, C NW NW, Section 4, is bottomed at 2,798 feet in lime and anhydrite and killing gas, and its No. 3 State, NW NE SW, Section 4, is drilling at 1,575 feet in anhydrite. Top of the anhydrite was at 1,450 feet. Midwest's No. 26 State, C SE SE, Section 4, is drilling at 2,560 feet in salt, and its No. 26 State, C SE NW, Section 4, is rigging up. Texas Production Co.'s No. 1 McKinley, NE NW SW, Section 4, is bottomed at 2,750 feet and rigging up cable tools.

Sun Oil Co.'s No. 1 McKinley, C NE NE, Section 5-19-38, is drilling at 3,662 feet in anhydrite and lime. Atlantic Oil Producing Co.'s No. 1 State, NE cor., Section 6-19-38, is drilling at 1,550 feet in anhydrite. Top of the anhydrite was at 1,470 feet.

Midwest Refining Co.'s No. 8 State, C NW NW, Section 10-19-38, is drilling at 2,680 feet in anhydrite. Base of the salt was at 2,550 feet. Texas Production Co.'s No. 1 Selman, NW cor. SE, Section 15-19-38, the farthest south of the drilling wells, is drilling at 3,112 feet in anhydrite. It had a show of gas at 2,970 feet and a show of oil at 2,975 feet. Top of the lime was at 2,895 feet and elevation is 3,590 feet.

Fisher & Lowrie's No. 1 State, NE cor. NW, Section 11-18-36, 9 miles west of Hobbs Pool, was drilled to 5,500 feet and plugged back to 5,171 feet and shot with 200 quarts at 5,120-71 feet. After being shot, it swabbed 32 bbls. in 12 hours.

Maljamar Area—Lea County

Maljamar Oil & Gas Co.'s No. 3 Baish, SE NE NW, Section 21-17-32, was completed at 4,169 feet and made 150 bbls. first 24 hours from pay at 3,998-4,169 feet. It is about half a mile west of the nearest producer. Elevation is 4,085 feet, top of salt 1,029 feet, and bottom 1,995 feet.

Eunice Area—Lea County

Continental Oil Co.'s No. 1 Meyer, SW cor. NW, Section 28-22-36, is drilling by tools at 3,635 feet. Total depth is 3,750 feet. George F. Getty, Inc.'s No. 1 State, NE cor., Section 19-21-36, is building rig, and Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, is drilling at 3,016 feet in anhydrite and lime. It bottomed salt at 2,955 feet and topped brown lime at 2,975 feet. Tidal Oil Co.'s No. 1 Coleman, SW cor. NE, Section 17-21-36, is drilling at 3,182 feet in anhydrite. It had some gas at 2,990, 3,097 and 3,109 feet. The aggregate flow is estimated at 10,000,000 feet.

Cooper Area—Lea County

Texas Pacific Coal & Oil Co.'s No. 5-A State, C E half NE, Section 20-23-36, is drilling at 3,443 feet in lime. It topped lime at 3,285 feet.

Jal Area—Lea County

Midwest Refining Co.'s No. 34 Farnsworth, SE SE, Section 13-26-36, cemented 10-inch on bottom at 3,072 feet. It had a show of gas at 3,030 feet. Same company's No. 19 Farnsworth, SW SW, Section 14-26-37, is drilling at 2,740 feet in lime and anhydrite. Base of salt was at 2,535 feet and top of brown lime 2,565 feet.

Eddy County

Lockhart & Co.'s No. 2-X Parke, NW NW, Section 23-17-30, Maljamar area, is drilling at 2,780 feet in lime, and Flynn, Welch & Yates' No. 2 Stevens, NE SW, Section 13-17-30, is fishing at 3,250 feet. R. D. Compton's No. 2, SE SE, Section 5-18-27, is drilling at 100 feet. George F. Getty, Inc.'s No. 5 Dooley, NW SE NW, Section 23-20-29, Twin Mounds Pool, is rigging up cable tools. This is reported to be a deep test. The company has some producers of heavy black oil at around 1,400 feet.

San Miguel County

The Hirshfield Development Co.'s No. 1 Cubra Springs Ranch, NE, Section 21-12n-22, is drilling at 1,130 feet.

Dona Ana County

Viking Oil & Development Co.'s No. 1 Cox Ranch, NW SW NW, Section 26-23s-5e, is reported shut down in gravel at 1,057 feet. It commenced spudding May 3 under a 3,000-foot contract.

Torrance County

J. B. Witt Oil & Gas Co.'s No. 1 Kutchin, Section 12-7n-7e, McIntosh district, is drilling at 910 feet, about 400 feet in the Pennsylvanian, and is reported to have had an oil show at 900 feet.

San Juan County

San Juan Leaseholds Co.'s No. 3 Bowman, NW NE, Section 30-30-15, Meadows district, is resuming at 2,560 feet after being shut down for casing. Casing is on the ground.

Socorro County

Lockhart & Co.'s No. 2 Stackhouse, SE SW, Section 14-3s-6e, is bottomed at 2,772 feet in red shale and fishing for pipe.

COLORADO

Morgan County

The Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, on the Fort Morgan anticline, is drilling at 2,010 feet and is believed to be drawing close to the Hygiene sand which will furnish the first marker of importance. This sand is expected somewhere between 2,200 and 2,400 feet. This test has for its principal objective the sands in the Dakota series of the Upper Cretaceous period and these are hardly expected under 4,500 feet. It is estimated close to 1,000,000 acres have been leased in eastern Colorado by the major companies who are doing extensive geophysical work, but the Fort Morgan test

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Stocks in All Principal Fields

has only an indirect bearing on this activity. Most of the leasing is farther east and south and is in areas where the Pennsylvanian formation is looked upon as the most attractive possibility. Blocks are being taken on long-time basis without any immediate drilling clauses and several tests will have to be put down before much subsurface geology is definitely known. Should the Fort Morgan test fail to prove up the Dakota, the situation will remain practically unchanged so far as the other areas are concerned.

Adams County

Nettie M. Slatt's No. 1 Hills, SE cor., Section 27-3s-64, is bottomed at 1,950 feet and underreaming 10-inch. This is a 5,000-foot test with the Dakota as the objective.

Washington County

Middlemist Oil Co.'s No. 1 Middlemist, SW SE, Section 14-4s-56, is drilling below 1,150 feet in a Dakota test.

Elbert County

J. M. Botts and others' No. 1 Buick, SE cor., Section 1-8s-59, near the town of Agate, is reported shut down at 4,120 feet. The 6¼-inch dropped 30 feet and parted more than a year ago and 3,250 feet is reported to have been recovered and the quantity left in the hole is unknown. The test has had some gas and oil shows, but the hole probably is in bad shape at around 3,250 feet.

Larimer County

C. Leonard Smith of Denver is rigging up for his No. 1 State, SE cor., Section 36-12n-70, on the Sand Creek Dome, 6 miles west of the Round Butte structure, for a test to the Pennsylvanian formation. The Dakotas are eroded and the objective is expected at around 1,500 feet. A perfect closure was worked out by the geologist who reported on the structure. This makes four tests to the Pennsylvanian along the east front of the mountain range, the others being the Continental Oil Co.'s well on the Deininger Dome farther to the south, the Donahoe well at Bellvue and a well being drilled by the Reliance Oil Co. about 3 miles west of the town of Lyons.

Continental Oil Co.'s No. 3 Scott, SW SE, Section 6-9n-68, Wellington Dome, an old producer in the Muddy, which is being deepened to test the Lakota, is drilling at 4,530 feet and carrying 6¼-inch. The 8¼-inch was lowered to 4,425 feet to shut off the upper sand. Same company's No. 1 Hoffman, SW NE, Section 23-4n-70, Deininger Dome, is rigging up for a Pennsylvanian test. Donahoe, Babcock and others' No. 1 Maxwell, NE NE, Section 25-8n-70, Bellvue district, is drilling at 125 feet in very hard sandstone which has slowed up progress.

Jackson County

Producers & Refiners Corp.'s No. 1 Hendershot, SE NE, Section 2-6n-81, Pole Mountain area, is drilling at 4,136 feet in sandy lime. The quantity of water has increased and the well is flowing. Midwest Refining Co.'s No. 21-X Rich, SW NW, Section 9-6n-80, Buffalo Creek, is drilling in sand at 4,115 feet. A water shut-off was made at 4,030 feet.

Routt County

Texas Production Co.'s No. 7 Quaintance-Hocking, NE SE, Section 18-6n-86, Tow Creek, is drilling at 2,320 feet, and its No. 4 Carstarphen, NW NW, Section 5-6n-86, has derrick and rig completed and is standing.

Moffat County

Midwest Refining Co.'s No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock, is bottomed at 2,908 feet and preparing to mud again. Gas at this depth gauged 10,000,000 feet. This possibly is coming from a second horizon 60 feet below the 25-foot sand which gauged 32,000,000 feet in 24 hours. Texas Production Co.'s No. 1 Berlin, SW NE, Section 19-12n-100, Bartram Dome, is plugging back from 2,654 feet to 2,055 feet to complete as a gas well, and its No. 12 Knowlton, SW SE, Section 33-5n-91, Moffat Dome, is shut down at 4,048 feet on account of the death of Patrick Vaughn, drilling contractor.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, is drilling in shale at 5,040 feet. The shale beds have proven to be much thicker than anticipated.

Mesa County

Argo Oil Co.'s No. 1 Hoel, NE cor., Section 23-8s-104, High Line, is redrilling at 2,758 feet and bringing up considerable iron. Total depth is 3,000 feet.

Montezuma County

Mesa Verde Ranch Co.'s No. 1 Haller, SW cor., Section 29-36-14, near the entrance to the Mesa Verde National Park, which encountered gas in the Dakota at 740 feet in a well drilled for water, gauged 220,000 feet in 24 hours in a meter test, with a pressure of 180 pounds. Samples of the gas are being analyzed for gasoline content. There are several towns near the well which offer an opportunity for developing the gas for domestic purposes, though the question will not be a very large one according to present indications.

Dolores County

Transcontinental Oil Co.'s No. 1 Glade, C NW, Section 30-41-16, is drilling below 6,351 feet.

Las Animas County

Trindad Development Co.'s No. 1 Flonz, SW NE SW, Section 23-32s-63, was abandoned at 2,960 feet (corrected) and will be saved as a water well. The water stood within 20 feet of the top. Water sands were found at 400 feet in the Pierre, 2,000 feet in the Dakota and 2,646 feet in the Morrison and Lyons.

Douglas County

Perry Park Oil Co.'s No. 1 Cannon, SE NW, Section 11-9s-68, a test of the Pierre shale, is drilling at 1,000 feet and carrying the 8¼-inch. A show of gas at 950 feet is considered a favorable indication as similar shows in the Florence shale field had generally been followed by oil in the Pierre beds.

UTAH

Midwest Refining Co.'s No. 31 Pary, SW SE, Section 14-39s-1w, Butler Valley, Kane County, is drilling at 4,260 feet in the Supi formation of Pennsylvanian age. Diamond Oil Co.'s No. 1, Section 16-8s-5e, Utah County, is drilling below 2,300 feet in brown shale.

IDAHO

Grand Teton Oil Co.'s No. 1 Blevins, SW SE, Section 33-5n-44, Horseshoe structure, Teton County, is bottomed at 2,800 feet in the Aspen formation and running the 6¼-inch to shut off water which broke in from behind the 8¼-inch. Same company's No. 1 Bevan, NW SE, Section 28-5-44, is shut down waiting for fishing tools. The Monieda Oil Co.'s No. 1 Rose, NE, Section 34-14-36, Clark County, is reported shut down at 1,360 feet in the Woodside shale of lower Triassic, with only a watchman in charge. Norton Oil & Gas Co.'s No. 2 Sorenson, SW SW, Section 19-10s-37, Bannock County, is preparing to run a string of 5⅞-inch pipe. Total depth is 2,704 feet in the Madison lime with bubbles showing on the warm sulphur water. Norton company is reported to have taken over the interests in this well held by L. W. Kiene. Idaho Natural Gas Co. is reported to have acquired the interests of George Thorson and C. R. Teters in No. 3 Norton, SW cor., Section 13-10-36, which is shut down at 1,200 feet with water in the hole.

WYOMING

A new oil field has been opened up on the Byron Dome in Big Horn County, Wyoming, in the Ohio Oil Co.'s No. 1 Union Gas, NE cor., Section 22-56-97, in the Tensleep formation. The drill entered the Embar formation at around 5,286 feet and began showing oil at 5,300 feet. A core was run and this showed 100 feet of saturation. Operations were then suspended until tankage could be erected. This week the crew returned and started drilling out the plug. The hole was carried through the Embar and into the Tensleep and stopped at 5,414 feet. It was tubed and then given a short test, being allowed to flow for a few hours. This test indicated it would be at least a 1,000-bbl. well. The oil, though black, is about 26 gravity and high grade and is said to be much better than grades in the same formation in other black oil fields in the Big Horn Basin. Last year the Cross Gas Co.'s No. 1, NW cor., Section 23-56-97, was drilled to the Sundance sand and was completed at 4,230 feet with a production of 90 bbls. a day on the pump. The Ohio company then decided to drill an offset to this well on the west and make it into a test to the Tensleep. It commenced spudding on September 9, 1929, and at 354 feet changed over to rotary to go through the big gas in the upper measures. The Byron Dome has been producing gas from the Frontier and Dakota formations for many years, but the No. 1 Union Gas is the first to get down to the Tensleep. The structure is approximately 3 miles long and from 1½ to 2 miles wide. It is considerably faulted. The discovery is further enhanced by the Ohio Oil Co.'s No. 1 Easton, SW NW NW, Section 33-56-97, which also used a rotary drill to get through the gas and is down 3,887 feet in the Madison lime. The hole has been showing oil in that formation from 3,750 feet to the bottom at 3,887 feet, where operations were suspended and the crew sent over to No. 1 Union Gas to drill it in. While the Easton proves the Madison to be productive, the capacity of the well has not yet been determined. The Easton well had heavy gas pressure in the Embar which was killed at 3,094 feet without testing, but was estimated at 30,000,000 feet and in other wells had a pressure of 1,400 pounds.

Garland Dome

Adjoining the Byron Dome and separated from it by a deep syncline is the Garland Dome, a much larger structure, which also has been producing gas for years from upper formations. One test on the Garland Dome, the Utah Southern Oil Co.'s No. 3 Government, NE cor. SW, Section 29-56-97, is believed to have reached the lower Tensleep and possibly the upper Madison and is a 17,000,000-foot gas well with heavy pressure. The Producers & Refiners Corp.'s No. 3, SW NW NW, Section 24-56-98, a joint operation with the Kinney-Coastal Oil Co., has had big flows of gas in the Embar and Tensleep and for nearly a year has been endeavoring to drill below its present depth of 4,234 feet and make a test of the Madison. The heavy gas pressure on the top of the Garland Dome, measured by the results on the Byron Dome, indicate that on the flanks of the structure oil will be found.

Fremont County

The Texas Production Co.'s No. 1 State, SW SW, Section 36-34n-95, on the Alkali Butte Dome in Fremont County, Wyoming, which was showing oil last week at 4,182 feet in what appeared to be the top of the Muddy, drilled to the bottom of that formation, which consisted of shale only, and continued to 4,381 feet when it was delayed by casing trouble. Upon resuming at that depth the bit entered the top of the Dakota formation and began making gas and spraying oil. The gas flow was estimated at 8,000,000 feet. The bit had not yet entered the sand. A. R. Wilson, general manager, and other officials have gone to the well. The oil encountered in the Muddy shale was a high-grade green crude. The well is a little less than a mile to the north of the discovery well on this structure which was drilled in a year ago by the Texas Production Co. and is the only test to be put down since then. The Producers & Refiners Corp. is starting another well on the Muskrat Dome in its No. 12, Section 16-33-91, which is rigging up. This is a state lease which was the subject of a controversy recently settled by the state land board. There were two claimants, Isabelle White of Seattle, who had an operating agreement with the Texas Production Co., and Robert Connaghan of Cheyenne, who had an agreement with the Producers & Refiners. A compromise decision resulted in a lease on the south half being given to Connaghan and a lease on the north half to Mrs. White. The tract is south and east of the big gas well completed by the Producers & Refiners Corp. more than a year ago. Producers & Refiners' No. 2 Muskrat, SE NW, Section 33-34-92, is bottomed at 3,437 feet and repairing boilers. Same company's No. 10, Section 14-32-95, Sand Draw, is drilling at 3,190 feet in sandy shale. The Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, is bottomed at 3,735 feet, above the Lakota, and is preparing to core after sidetracking a second bit.

Natrona County

Midwest Refining Co.'s No. 29-DT, NW, Section 35-40-79, the Salt Creek deep test, is drilling at 1,790 feet in white

(Continued on Page 105)

FIVE-BARREL WELL IN AUSTRALIA; GRAVITY ABOUT 20; DEPTH 1,245 FEET

Word has just been received in Tulsa that the South Australian Oil Wells Co., with main offices in Melbourne, Australia, has recently discovered crude oil in its No. 2 well in the Lakes Entrance Field.

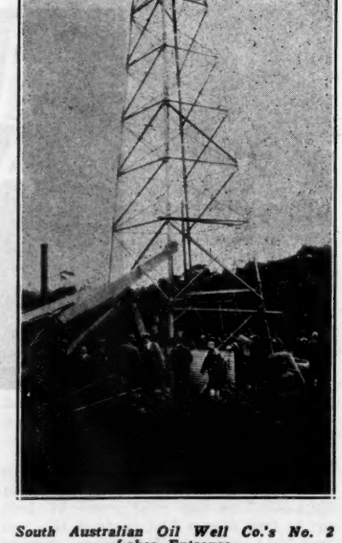
The South Australian Oil Wells Co. was registered in Melbourne during 1914 to explore a large area in the Robe district of South Australia. It is reported that drilling has more recently been in progress at Nelson about 200 miles west of Melbourne along the coast, and at Lakes Entrance about 200 miles east of that city.

It is at the Lakes Entrance well No. 2 that the discovery has been made and it is reported as follows:

"It is shallow drilling, 1,245 feet, in Miocene. The oil sand is 38 feet thick in a glauconite greenish sand with hard bands one-half inch thick. The well is making about 5 bbls. per day. The oil has a gravity of about 20." This discovery is assumed to prove that the lower Tertiary formations of Victoria are oil bearing and is therefore of more importance in that respect than as a producing well.

The officers of the South Australian Oil Wells Co. are E. Davies, chairman; G. B. Gordon, H. A. Hancock, A. W. Imray and D. McRorie, directors; Dr. H. Basedow, consulting geologist; and H. S. Lyne, general manager.

Mr. Lyne is a graduate of Leland-Stanford University in the class of 1912 and has traveled over a large part of the world as a consulting geologist. He spent some time in Brazil and Venezuela and was accompanied on the Brazilian trip by John H. Wiggins of Tulsa, and together they spent nearly a year in that country.



South Australian Oil Well Co.'s No. 2 Lakes Entrance.

Decided Improvement in California

Immediate Future Depends Upon Playa Del Rey Field, Which Is Still An Enigma. Two Important Projects Under Way

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., July 19.—Production and stock figures for June, 1930, reveal a very decided improvement over conditions existing in California at the beginning of the year. During January California operators produced 709,137 bbls. per day, but due to subsequent curtailment and a natural decline in production of flush fields, State production was brought down to 600,693 bbls. per day during June. This represents a reduction of 108,444 bbls. daily. Due to a draft on storage of 3,389,282 bbls. during the past month, total stocks on the Pacific Coast were brought down to within 421,481 bbls. of the amount on hand at the beginning of the year. At the close of June, Pacific Coast stocks totaled 184,342,252 bbls., compared with 184,763,733 bbls. on hand January 1, 1930.

Crude oil production in California has been holding fairly close to the 600,000-bbl. mark since the first of June due to effective curtailment work but it would not be at all surprising if daily production registered an increase within the next 60 days. The Playa Del Rey Field of Los Angeles Basin holds the key to the production trend during the next several months as any increase in the output of this field is bound to be reflected in State production. If Playa Del Rey fails to result in sustained production, the crude oil situation in California should improve.

Based on developments up to the present Playa Del Rey looks like a field of minor consequence compared with Santa Fe Springs and Long Beach but may be expected to show a favorable production from a field standpoint. With the exception of the Union Oil Co. and the Ohio Oil Co., many operators will probably not develop sufficient production to justify development. Early completions are of course excepted because these wells are participating in flush production but even at this early date there are several producing wells at Playa Del Rey which will require an extended production period before liquidating drilling costs. The Ohio's No. 1 Brown, bottomed at 6,057 feet, and No. 2 Dickinson, finished at 6,324 feet, and pumping 160 bbls. and 190 bbls., respectively, will obviously require a relatively long time before showing any profit above drilling and operating costs. The Deuel Petroleum's No. 1 Venice, another small pumper from 6,142 feet, and the Santa Fe Springs Oil Co.'s No. 1 Venice, which is going on the beam at 6,045 feet, will also require an extended production period for liquidation. The Ohio Oil Co., with its large Recreation Gun Club lease, and the Union Oil Co., with its substantial Del Rey lease, should both make money by normal spacing of wells and consequent lower development costs provided, a substantial part of these large holdings are productive.

Still an Enigma

It will probably be a month or two before sufficient data is available upon which to determine the extent and productivity of the Playa Del Rey Field with any degree of accuracy. At present the outlook is particularly discouraging from a production standpoint because the limited amount of oil sand found in the deep Recreation zone precludes the development of substantial sustained production. Subsequent development nearer the apex of the structure may reveal a more favorable condition in which the total ultimate recovery may be larger than appears probable now. The fact that Playa Del Rey is still somewhat of an enigma can be attributed to the fact that initial development work has been located in close proximity to the discovery well, which correlation work indicates is not any too favorably located with respect to structure. It is interesting to note that wells nearer the apex of the structure, which engineers have tentatively located near the Mohawk Petroleum's No. 1 Venice, have shown better production than that group of wells situated near the discovery well, which correlation work indicates is considerably outside of upper contour lines.

The Union Oil Co. has just completed No. 1 Del Rey, its first well in the Playa Del Rey Field good for 500 bbls. per day from the upper zone at 4,016 feet. This new well is considerably higher on the structure and is believed to have proved up several hundred acres of leases held by the Union and Ohio Oil Co. The Union has already started rig construction for two new wells on a 50-acre community lease and spud will probably be made within a few weeks, although drilling operations may be delayed a little because of the swampy condition which requires considerable preliminary reinforcement work. The Union is also making preparations to start two new wells on the Del Rey lease and should start driving piles in a few days.

A total of 26 trucks are working night and day building new roads and covering the swampy terrain with several feet of new earth to facilitate development work on the Union's Del Rey lease. The company has planned a rather comprehensive program at Playa Del Rey involving construction of a pipe line pumping station and the erection of a new absorption plant. Several tanks are in course of construction supplementing present storage facilities erected some time ago to take care of anticipated production. The Union's new 8-inch line is already partially completed and should be finished in the near future. The Ohio's No. 2 Del Rey is perhaps one of the most important projects under way in the Playa Del Rey Field because if commercial production is developed it will extend the proven limits of the field approximately 2,500 feet northeast. This well, which topped the conglomerate at 6,616 feet and drilled into the basement complex or schist at 6,677 feet, is standing cemented with a string of 8⅝-inch landed at 6,460 feet preparatory to an early test. Another important well scheduled for an early production test is No. 1 Moses of the Superior Oil Co., which picked up the top of the conglomerate at 5,566 feet and encountered the schist at 5,611 feet. This well, with a string of 8⅝-inch landed at an appropriate depth, will be watched with considerable interest as it drilled through an unmistakable fault and subsequently encountered the deep Recreation zone and picked up enough oil sand to warrant the anticipation of production. No. 1 Moses also presents an interesting situation because it failed to develop commercial production in the shallow sand tested out in the Union's No. 1 Del Rey, notwithstanding these two projects are within 1,000 feet of each other.

Long Beach

Although Santa Fe Springs has ceased to be a factor from a drilling standpoint, 85 new wells and almost as many former upper zone producers are still drilling in search of deeper production at Long Beach. The enormous thickness of oil bearing formation at Long Beach, perhaps unequaled in the world, is especially conducive to large initial sustained production. This field has enjoyed practically an uninterrupted aggressive development period since its discovery and is still yielding substantial producers nine years after completion of the first well. The productivity of Long Beach is indicated by the fact that large wells have been completed all during this period consistently, unlike Santa Fe Springs where the productive zones were individual units and permitted the elapse of several years before the deper horizons were developed. The producing formation at Long Beach on top of the structure is more than 2,000 feet thick and quite a number of wells are producing from this entire thickness.

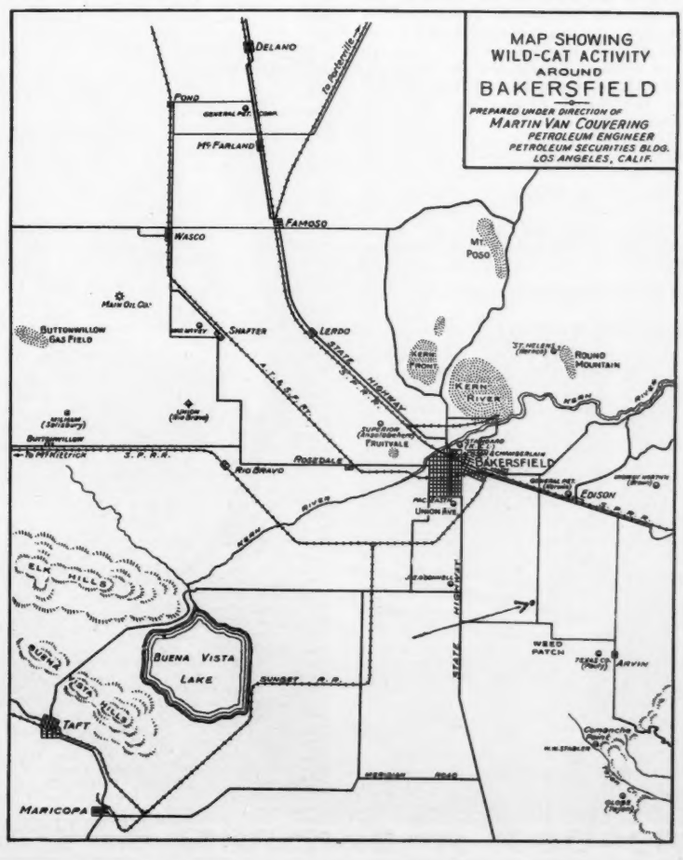
That there is still a considerable amount of oil at Long Beach is evidenced by the completion this week of Dabney & Johnson's No. 52 Signal. This new well was brought in a few days ago flowing 3,575 bbls. of 28.6 gravity oil and 4,000,000 feet of natural gas per day from 7,013 feet. In accordance with the curtailment agreement this new well will be permitted to flow for five days to establish its actual potential before being beaned back to the allowable established

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	566,045
Fuel oil	.....	.....	.....	.....	71,950	49,950
Diesel and gas oil	.....	.....	65,037	9,262	1,984,189	913,200
Gasoline	458,788	65,541	805,888	115,127	10,404,942	10,768,217
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	409,672	58,525	163,000	23,257	8,277,478	12,448,695
Fuel oil	404,700	57,814	214,803	30,686	9,171,848	11,494,650
Diesel and gas oil	17,561	2,509	17,516	2,502	1,040,689	711,373
Gasoline	264,596	37,799	335,708	4,797	6,530,604	5,575,597
Kerosene	5,782	826	.....	.....	102,604	37,157
Exports—						
Crude oil	85,729	12,247	280,776	40,111	3,632,103	2,809,650
Fuel oil	274,308	39,187	399,352	57,050	10,085,926	10,147,934
Diesel and gas oil	16,980	2,426	132,562	18,937	2,480,229	1,463,609
Gasoline	163,944	23,421	465,128	66,018	8,661,226	5,657,387
Kerosene	65,709	9,387	.....	.....	2,112,640	1,629,108
Lubricants	.....	.....	.....	.....	10,082	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	88,280	.....
Gasoline	64,375	9,196	.....	.....	706,055	1,189,377
Lubricants	10,910	1,559	.....	.....	16,776	69,172
Coastwise—						
Fuel oil	44,091	6,299	73,180	10,454	1,932,377	1,422,512
Diesel and gas oil	7,870	1,124	.....	.....	160,414	315,460
Gasoline	16,127	2,304	141,380	20,197	2,163,655	2,659,464
Kerosene	.....	.....	11,515	1,645	136,893	75,313
Exports—						
Crude oil	.....	.....	.....	.....	3,075	121,603
Fuel oil	.....	.....	.....	.....	481,000	395,731
Diesel and gas oil	.....	.....	5,514	788	237,504	155,474
Gasoline	.....	.....	41,161	5,880	2,254,184	3,005,499
Kerosene	.....	.....	2,492	356	380,083	382,417
Lubricants	.....	.....	.....	.....	18,672	21,899



by Umpire Anderson. By a strange irony of fate, this well is on the site of the first hole drilled by the Dabney & Johnston interests some years ago. The initial well was carried down to 4,500 feet and subsequently abandoned because of the shallow water impregnated horizon prevalent along the south flank of the Long Beach Field. Developments during the past year indicated the probability this lease would prove highly productive in the lower zones and drilling operations were undertaken. Dabney & Johnston have one other well drilling on this lease and are making preparations to start two more soon.

E. E. Combs and the Community Monarch Oil Co. also finished satisfactory producers in the Long Beach Field. The former's No. 14 Rappaport was finished flowing 494 bbls. of 29.1 gravity oil from the deep Miocene at 7,105 feet. The Community Monarch's new well was No. 1 Aidline, brought in under a natural flow doing 675 bbls. of clean 29.1 gravity oil daily. This new producer was finished at 6,963 feet and completed with a 5¾-inch combination string cemented through perforations at 6,400 feet. The James Oil Co. also added a new well by finishing No. 6 Signal flowing 435 bbls. of exceptionally clean 31.3 gravity oil and 1,500,000 feet of saturated gas daily from 7,050 feet, the hole being finished with a 4¾-inch oil string. The Power Petroleum Corp. failed to secure a natural flow in No. 1 Signal, finished in the Pliocene at 5,319 feet, but succeeded in finishing it doing 130 bbls. when put on a compressor.

Santa Fe Springs

The Union Oil Co. failed to secure a natural flow in No. 59 Bell, a new well finished in the Nordstrum zone at 5,225 feet, but this project proved a successful satisfactory completion when put on a gas lift. This artificial stimulation turned a small unsatisfactory completion into a substantial producer doing 2,720 bbls. of 29.2 gravity oil per day. The completion of this well leaves the Union with only a few incompleted drilling projects and upon conclusion of this work it will devote its efforts elsewhere, presumably at Playa Del Rey. All other companies at Santa Fe Springs are likewise concluding development work with the result that there are only 10 drilling wells under way at present. The General Petroleum did not experience much success by redrilling and deepening No. 145-D Santa Fe to the Clarke zone as it was good for only 10 bbls. upon completion of drilling at 7,280 feet. The Wilshire Oil Co. recently abandoned No. 1 Buckbee, the deep zone discovery well which precipitated deep zone exploitation after a dormant drilling period of several years, and all that remains is a heap of debris which is being removed. This well did not prove unusually productive although it remained on production for several months before sanding up. Efforts to redrill and deepen it proved unsuccessful and with the hole full of junk it was subsequently abandoned after a suspension of several months.

The Standard Oil Co. recompleted No. 46 Emery in the West Coyote Field after redrilling and deepening it to 4,325 feet. It was returned to production doing 480 bbls. of 27.8 gravity oil cutting 5 per cent. In the Potrero Field of Los Angeles Basin, the Pan Cal Oil Corp. successfully finished No. 9 Community flowing 430 bbls. of clean 30.6 gravity oil per day from the deep zone at 5,231 feet, the hole having been finished with a 4¾-inch liner carrying 205 feet of perforated. The Richfield Oil Co. landed a string of 9-inch in No. 1 Coffin preparatory to testing out a new deep zone cored between 6,110 feet and 6,258 feet. The outcome will be watched with interest as the two upper sands failed to result in sustained production due to the limited amount of oil sand in each zone. The Sunset Pacific's Nos. 2 and 3 on the Inglewood Community lease, both of which showed satisfactory production upon completion several months ago, are cutting 14 per cent water. The only well in the Potrero Field which has shown a sustained satisfactory production is Taylor & Murphy's No. 1 Seeberd, which has been flowing approximately 800 bbls. of clean 40.2 gravity oil per day. During the past few weeks, however, the water cut in the production has been steadily increasing and if it runs according to precedent it should be cutting well in excess of 10 per cent shortly. In the Newhall Field the Southern California Drilling Co. successfully completed No. 3 Needham, a new well pumping 95 bbls. of 21.0 gravity oil per day from 1,683 feet, the hole having been finished with an 8⅝-inch liner carrying 300 feet of perforated.

Elwood

Two new wells were put on production in the Elwood Field of Santa Barbara County early in the week and a check of development work under way indicates the probable completion of several more in the near future. The Bankline Oil Co. finished No. 3 on tideland permit No. 89 flowing 1,510 bbls. of clean 36.8 gravity oil and 750,000 feet of natural gas per day from 3,388 feet. This is the third successful completion finished in this field by the Bankline and it should be followed by another, No. 6, which is standing cemented at 3,132 feet. The Elwood Exploration Co.'s well No. 4 on tideland permit No. 90 tanked 2,280 bbls. of clean 36.8 gravity oil during the initial 24-hour test following completion at 3,420 feet. The crew from this well was immediately shifted to well No. 8 on the same lease and spud has been made.

The Pacific Western Oil Co. has just filed abandonment notice on No. 3 on tideland permit No. 92 due to the inability to develop commercial production. This is the first well to be abandoned in the Elwood Field although several dusters have been drilled around the edges of the field and within a radius of 5 miles from the discovery well. Two new wells were finished in the Ventura Avenue Field although neither registered substantial production. The Shell's No. 55 Taylor, which made a preliminary flow several weeks ago from 4,016 feet, was cleaned out to bottom and returned to production flowing 365 bbls. of exceptionally clean 31.8 gravity oil daily. No. 3-A McGonigle of the Associated, carried down into the deep zone and finished at 7,183 feet, was brought in flowing 405 bbls. per day but appears wet for the second time and may require another cement job.

Round Mountain

The Shell successfully finished a new producer in the Round Mountain Field of Kern County when No. 8 Freeman in Section 20-28-29 was brought in pumping 180 bbls. of 21.6 gravity oil per day from 1,622 feet. Harry Failing concluded drilling operations on No. 1 Coffee in Section 1-28-28 at 1,761 feet but this new well sanded up after being on production for a few hours. There were no developments of importance in the Mount Poso Field as drilling operations are practically negligible, having been substantially reduced during the past 60 days. The Maricopa Flats section of the Midway-Sunset Field was likewise devoid of any interesting developments, although a check of development work indicates the probable early completion of several potential producers.

The Continental Oil Co., having received permission of the Department of Interior and sanction of the Kettleman Hills Operators Committee, is expected to start work within a few weeks on a new well offsetting the Felix property of the Petroleum Securities and acreage of the Standard located in Section 35-21-17. This new well, one of three permitted to be drilled, is specifically prohibited from being placed on production although it is likely the Department of Interior will subsequently revise this order so that the Continental's Government lease can be protected from undue drainage. The Associated's No. 1 Whepley, on fee owned acreage in Section 35-21-17, is rotating in a hard sand which reacts favorably to the ether test at 7,700 feet. The fact that this hard fine sand shows acetone cuts indicates the possibility this well may develop commercially notwithstanding it is further out on the structure than any other wells in this particular section of the Kettleman Hills Field. The Petroleum Securities is making good footage in No. 2 Felix, an offset to No. 1 Felix which was brought

(Continued on Page 130)

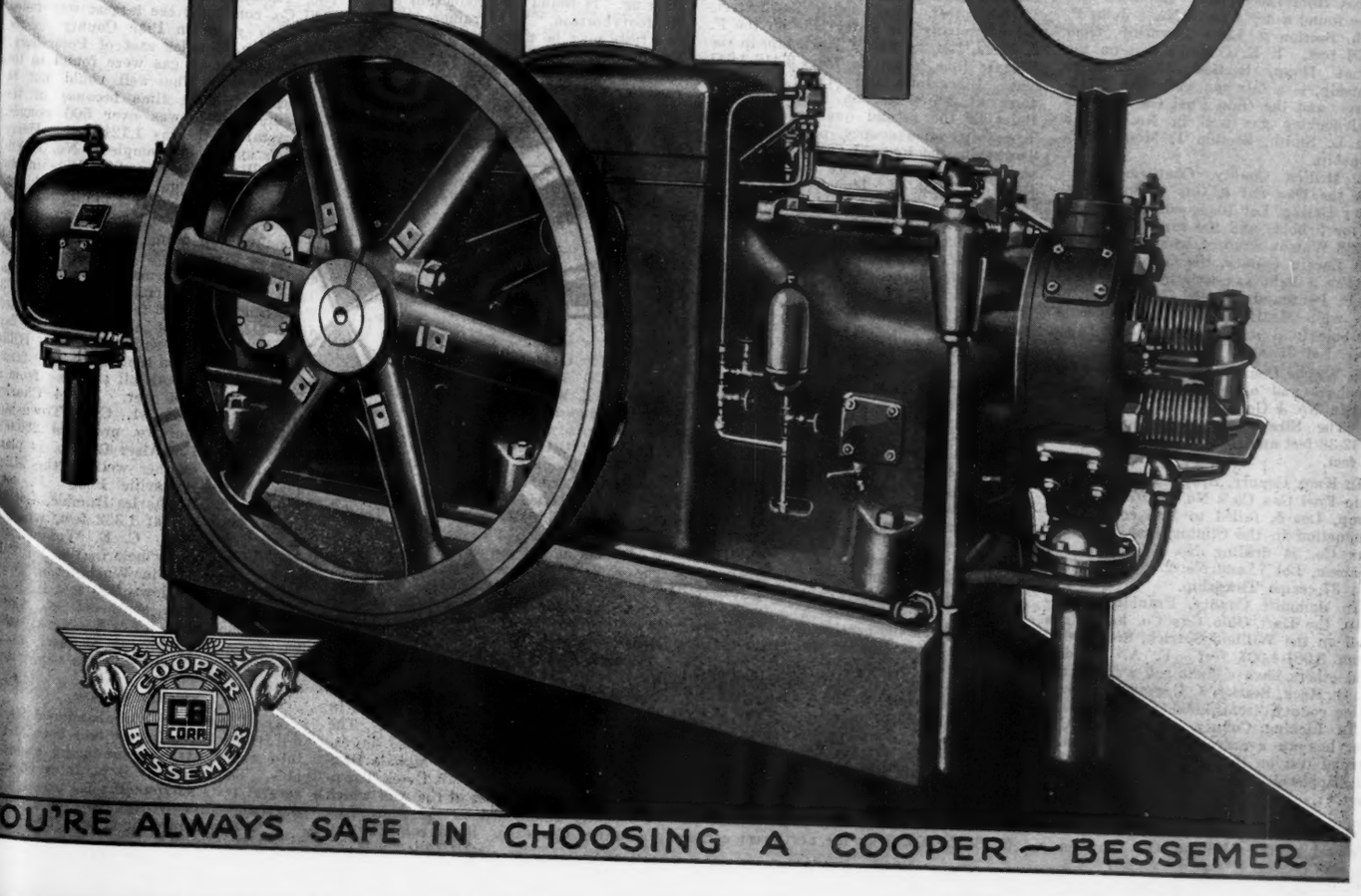
IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Union, No. 1 Orchard Dale, Los Angeles Co.	10- 3-11	2,815	sd. sh. drilling
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	4,078	sd. sh. drilling
Crimson Pet., No. 1 Compton, Los Angeles Co.	22- 3-13	130	suspended
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	suspended
Ohio, No. 1 Moneta, Los Angeles Co.	35- 3-14	6,780	hd. sd. drilling
Guajome Oil Co., No. 1 El Nido, Los Angeles Co.	33- 3-14	rig	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,910	sd. sh. drilling
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,400	fishing
Tri-State Oil Co., No. 1 Watts, Los Angeles Co.	12- 3-14	3,180	sd. sh. drilling
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	5,807	fishing
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	3,715	sd. sh. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	2,440	oil sand
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	3,660	suspended
Bardeen Pet., No. 1 Puente, Los Angeles Co.	9- 2-10	1,712	hd. sd. drilling
Sherman, J. W., No. 1 Puente, Los Angeles Co.	33- 2- 8	850	suspended
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	2,548	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,950	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,500	gr. sd. drilling
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	8- 3-16	2,025	cleaning out
Pioneer Pet., No. 1 Newhall, Los Angeles Co.	14- 3-16	2,838	suspended
Union, No. 1 Coyote, Sansinena, Los Angeles Co.	30- 2-10	3,870	br. sh. drilling
Tureco Oil Co., No. 1 Whittier, Los Angeles Co.	29- 2-11	5,300	sd. sh. drilling
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	8- 2- 9	6,060	hd. sd. drilling
Graham & Loftus, No. 1 Coyote, Orange Co.	8- 3- 9	5,380	sd. sh. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	1,206	sd. sh. drilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	cleaning out
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,420	hd. sd. drilling
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	2,410	gr. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	fishing
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	1,549	cleaning out

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	4,895	br. sh. drilling
Universal Consd., No. 1 Pt. Conception, Santa Barbara Co.	30- 5-34	4,000	hd. sd. drilling
Prairie Oil Co., No. 1 Lomboc, Santa Barbara Co.	15- 7-35	3,850	sd. sh. drilling
Vaqueros Oil Co., No. 1 Purisima, Santa Barbara Co.	5- 7-35	3,005	250 bbls.
Fields Gasoline Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	3,704	cleaning out
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	2,215	sd. sh. drilling
Deuel Pet. Co., No. 1 Santa Ynez, Santa Barbara Co.	9- 7-30	3,130	hd. sd. drilling
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	2,880	suspended
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	cemented
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,664	plug back
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
Ring Oil Co., No. 1 Goleta, Santa Barbara Co.	16- 4-28	4,586	sd. sh. drilling
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	616	hd. sd. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	rig	rigging up
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	4,600	sd. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	4,087	hd. sd. drilling
Standard, No. 2 Casitas, Santa Barbara Co.	26- 4-25	930	sd. sh. drilling
Continental, Tideland permit No. 121, Santa Barbara Co.	33- 4-25	1,085	suspended
Continental, Tideland permit No. 122, Santa Barbara Co.	33- 4-25	1,020	suspended
Continental, Tideland permit No. 123, Santa Barbara Co.	33- 4-25	1,020	suspended
Continental, Tideland permit No. 124-A, Santa Barbara Co.	33- 4-25	418	suspended
Continental, Tideland permit No. 125, Santa Barbara Co.	33- 4-25	1,455	suspended
Continental, Tideland permit No. 126, Santa Barbara Co.	33- 4-25	1,034	suspended
Continental, Tideland permit No. 127, Santa Barbara Co.	33- 4-25	1,055	suspended
Continental, Tideland permit No. 128, Santa Barbara Co.	33- 4-25	1,054	suspended
Continental, Tideland permit No. 129, Santa Barbara Co.	33- 4-25	1,020	suspended
Exeter Oil Co., Tideland permit No. 163, Santa Barbara	32- 4-25	76	suspended
Getty, Geo. F., No. 120 Carpinteria, Santa Barbara Co.	32- 4-25	1,024	suspended
Getty, Geo. F., No. 130 Carpinteria, Santa Barbara Co.	32- 4-25	1,029	suspended
Shell, No. 5 Oxnard, Ventura Co.	14- 2-20	2,250	sd. sh. drilling
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,529	redrilling
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	6,400	sd. sh. drilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	2,374	cleaning out
Fennell, E. A., No. 1 Lankershim, Ventura Co.	13- 4-19	1,791	suspended
General Pet., No. 1 Fillmore, Ventura Co.	6- 3-19	2,660	sd. sh. drilling
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	fishing
Camarillo Synd., No. 1 Camarillo, Ventura Co.	33- 2-20	455	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	1,014	sd. sh. drilling
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	2,706	suspended
Milham Expltn., No. 9 Buttonwillow, Kern Co.	8-28-23	4,990	suspended
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	1,228	sd. sh. drilling
Shell, No. 1 Lerdo, Kern Co.	23-28-26	4,493	sd. sh. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	4,965	oil sand
Shell, No. 1 Edison, Kern Co.	33-29-29	5,575	hd. sd. drilling
Pet., Sec., No. 1 Edison, Kern Co.	14-29-29	418	sd. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	cleaning out
Elmer Oil Co., No. 1 Tejon, Kern Co.	15-30-30	4,300	sd. sh. drilling
Hancock Oil Co., No. 1 Jasmine, Kern Co.	23-25-27	2,665	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	4,216	sd. sh. drilling
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	505	hd. sd. drilling
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,160	br. sh. drilling
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	2,977	sd. sh. drilling
Stabler, W. W., No. 1 Commanche Pt., Kern Co.	4-11-18	1,627	sd. sh. drilling
Wrenn, J., No. 1 Antelope Plains, Kern Co.	32-25-17	638	sd. sh. drilling
Hannon, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,619	suspended
Richfield, No. 1 Kreyenhagen, Fresno Co.	33-22-16	2,140	hd. sd. drilling
Ohio Oil Co., No. 1 Coalinga, Fresno Co.	8-21-15	rig	rigging up
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,390	suspended
Fresno Madera Oil Co., No. 1 Clovis, Fresno Co.	18-22-21	4,470	suspended
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Libby Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,460	gr. sd. drilling
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,941	cleaning out
Union, No. 1 King City, Monterey Co.	8-22- 8	3,250	suspended
Standard, No. 1 King City, Monterey Co.	23-22- 7	4,660	hd. sd. drilling
Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co.	19-23-15	181	suspended
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	4,310	fishing
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin States Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	3,880	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, San Joaquin Co.	3- 2-10	3,535	suspended
Orinda Pet., Well No. 1 Contra Costa Co.	32- 1- 3	590	sd. sh. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,022	recemented
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	918	.25 bbls. daily
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	728	sd. sh. drilling
Consolidated Properties, Ltd., No. 1 Porterville, Tulare Co.	35-22-27	mil.	building rig
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	665	hd. sd. drilling

KEEP TROUBLE AWAY *from the* COOPER-BESSEMER TYPE-16



YOU'RE ALWAYS SAFE IN CHOOSING A COOPER—BESSEMER

New Area Opened in Hardin County

Close to Dozen Strings of Tools Working in Kenton Field. Twenty-Eight Completions in Central Ohio District

By Whit

Staff Correspondent, Central West Fields

FINDLAY, Ohio, July 21.—The greatest activity in the old Lima Field of northwestern Ohio is centered near Kenton, in Cessna Township, Hardin County, where a producing area has been opened where both oil and gas are found. There are close to a dozen strings of tools working in the Kenton Field, but one well was completed recently that does not make a very good showing, the Jupiter Oil Co.'s, or John Eberle, test on the Orville T. Price, Section 13, Cessna Township, which is reported showing for 5 bbls. The next couple of weeks, with average luck in drilling, at least half a dozen new wells should be found in the new area.

The Home Banking Co. has drilled in No. 6, 50 feet from the south line and 500 feet from the east line of the Edith Fought farm, NE, Section 11, Washington Township, Sandusky County, which produced but 1 bbl. initial from the Trenton at a total depth of 1,329 feet, or 42 feet in the sand.

CENTRAL OHIO

Twenty-eight completions were reported from the Central Ohio Field, of which 8 were producers with an initial of 239 bbls., 9 dry holes and 11 gas wells, while in new work starting there were 11 new locations staked and 19 wells spudding or drilling, a total of 30 in new work. The best oil producer was a 120-bbl. deep sand producer in Muskingum County.

In Ashland County, Perry Township, Crownshield and others' No. 6 Martie M. Wheeler, Section 28, is reported good for 10 bbls. from 726-46 feet. Robinson and others found a dry hole in No. 8 John P. Smith, Section 9, Lake Township, from 763-76 feet. I. E. O'Hail's test on the Thomas Doup, Section 31, Hanover Township, is a fair gas well from 2,712-24 feet, and the Ohio Fuel Gas Co. has a fair-looking gas well in No. 1-5,148 John L. Smith, Section 1, Montgomery Township.

In Medina County, Chatham Township, the Oko Oil & Gas Co.'s No. 36 Henry Essing, Lot 10, is estimated showing for 5 bbls., and the same company's No. 38 Watson-Sanford, same lot, 2 bbls.

In Lorain County, the Ohio Fuel Gas Co. has a light gas well in No. 1-5,093 W. P. Penfound, Lot 5, Carlisle Township, while McMillan and others report a dry hole in a second test on the Eliza Price, Lot 21, same township.

In Wayne County, Congress Township, Barnhart and others have a light gas well in No. 4 George G. Britton, Section 5. The Stray sand was found from 2,932-38 feet and Clinton lime from 2,948-57 feet.

In Knox County, Brown Township, the Ohio Fuel Gas Co.'s No. 1-5,075 Thomas Doup, Lot 5, failed to find commercial production in the Clinton lime. Upham Gas Co. is drilling No. 5 Charles F. Beaman, Lot 7, and No. 2 Phillip Bross, Lot 37, same Township.

In Summitt County, Franklin Township, the East Ohio Gas Co. has a gas well on the William Sorrick, Section 24, from 3,981-4,007 feet. F. A. Brendall and others have a light gas well on the A. G. Keck, Section 1, Greene Township, same county, from 4,006-23 feet.

In Licking County, the Wehrle Gas Co. has an average gas producer in a second test on the Merl Dodson, Section 31, Hopewell Township, from 2,895-2,920 feet.

Muskingum County

In Muskingum County, Hopewell Township, the Midland Oil Co. has a nice producer in No. 4 Ellen M. Denney, credited with an initial of 120 bbls. at 3,158 feet. Craig, Adair and others' No. 1 Earl Baughman, Section 3, Clay Township, is a fair gas well at 3,695 feet, but may be drilled deeper for the oil sand. The Athey Co.'s No. 1 J. W. Riley, Section 6, Union Township, is reported dry at 4,298 feet, there being only a light showing of oil and gas.

In Athens County, Ames Township, Fox & Mosure's No. 12 Robert Bean, Section 13, is reported dry from 370-74 feet. In Berne Township, Frank Selby has an average gas producer in No. 3 on the Levelett and others, Section 35, from 1,560-76 feet, total depth 1,582 feet. Carpenter & Glazier found a dry hole in No. 8 H. D. and C. C. Curtis, fractional Section 33, at 210 feet. Ohio Fuel Gas Co.'s No. 1-5,050 C. H. Tom, fractional Section 36, Lee Township, is reported dry at 1,250 feet. Bode and others' No. 12 W. D. Whaley, Section 24, Alexander Township, is reported at 1 bbl. from 1,207-10 feet. In York Township, the Wittmer Properties, trustee's test on the Hocking Fire Clay property, Section 23, reported a very nice gas well from 3,333-47 feet.

In Meigs County, Sutton Township, the Ohio Fuel Gas Co. has a gas well in No. 1-5,119 Ben N. Salser farm, Lots 13-18, at a depth of 3,640 feet. Tyree and others have a fair gas well in No. 2 J. C. Jividen, Lot 426, Section 23, at 3,642 feet, and a 4-bbl. initial pumper in No. 20 William Carnahan farm, in the Cow Run sand at 642 feet.

Tuscarawas County

In Tuscarawas County, Washington Township, the Gordon Oil Co. has a fair gas well along with 25 bbls. initial in No. 3 Dolly Hoffman, Section 35, from 3,575-87 feet, total depth 3,675 feet. Same company has a dry hole on the F. L. Euga, Lot 28, Salem Township, in the Niagara lime formation from 3,416-3,641 feet. Blackstone and others are shut down at 3,488 feet on the Adams H. Boltz in the second quarter, Warwick Township, same county, and in Goshen Township, the Federal Oil & Gas Co. is shut down at 4,200 feet on the Lewis Reichman, Lot 42. Hopewell Oil & Gas Co. is drilling No. 1 G. H. Smetts, Section 20, Oxford Township.

In Guernsey County, Wheeling Township, the East Ohio Gas Co.'s No. 1 Clarence Quillan, Section 10, is reported at 72 bbls. initial from 3,527 feet. The Kemrow Co. is drilling No. 3 J. W. Fowler, same section, and Jewell and others are drilling No. 1 William T. Lanning, Section 13, same township. In Cambridge Township, Ohio Fuel Gas Co. reports a dry hole in No. 1-5,083 I. J. Oldham, Section 3, at a total depth of 3,385 feet.

INDIANA

F. B. Hillis, trustee, drilled a test in the northeast corner of the Neal Lindy farm, SW, Section 31, Clay Township, Pike County, which showed an initial production of 25 bbls. from a depth of 1,565-76 feet, which may encourage further development work in that immediate vicinity. C. C. Talliaferro, Jr., is reported to have a dry hole in No. 6, 950 feet from the north line and 625 feet from the west line of the Della Kime, Location 12, same township, at a depth of 1,450 feet and another dry hole in No. 6, 1,600 feet from the south line and 525 feet from the east line of the Mary McAtee, SW, Location 146, same township. Murphy Oil Co. abandoned No. 1 on the Abijah Beatty, NW, Section 35, Monroe Township, same county, after pumping for a number of years.

In Pike County, Logan Township, E. C. Bolds' No. 6, in the northwest corner of the M. J. Adkinson, NE, Section 22, pumped 12 bbls. initial from 1,030-39 feet. Bell Brothers are drilling on the R. C. Hyneman farm, same township.

Big Four Oil & Gas Co.'s No. 4, 950 feet from the north line and 285 feet from the east line of the C. T. Sloan farm, SW, Section 18, Washington Township, Gibson County, came in with 55 bbls. natural from 1,257-62 feet, being the best of the late completions in the southwestern part of Indiana.

Gardner Petroleum Co. is drilling on the William Fritz, Section 35, Lockhart Township, Pike County. Charles Dice is drilling on the John Huffman farm, Section 7, near Huffman Mills, in Spencer County. J. B. Nay and others are drilling on the William Frazier, Section 19, Huff Township, same county. Chew & Delph are drilling on the Sturdwant farm, Section 20, Washington Township, Hamilton County.

Indiana Oil and Gas News

Compiled by Paul V. Simpson, state gas supervisor, department of conservation, division of geology of Indiana, by counties:

Crawford County—The Louisville Cement Co. plugged its test on the Perry Byrum farm at the south edge of Milltown in Whiskey Run Township. It was drilled to a total depth of 1,237 feet, but found only a showing of gas.

Daviess County—L. G. Gee and others drilled a well on the Otis Wildman farm in Veale Township, which produced 15 bbls. initial from a total depth of 1,350 feet.

Elkhart County—The third well on the Charles Stutsman farm in Porter Township, Cass County, Michigan, has been drilled several hundred feet into the Trenton without finding more than a showing. It found no production at the 700-foot horizon. It is rumored one or two tests may be made in northern Elkhart County, which is well leased up.

Floyd County—The Wood Oil Co. has completed a shallow test in Section 28, Franklin Township, which is to be abandoned. Several other tests are planned, one by Henry Foster and others.

Gibson County—Dr. C. C. Talliaferro has rigged up for another well on the Lew George farm in Washington Township. The Indiana Southwestern Gas & Utility Corp. completed its second well on the S. McCullough farm in Barton Township. It started at 60 bbls. from a total depth of 1,380 feet. The Big Four Oil Co. has rigged up for a fourth well on the C. T. Sloan land in Section 18, Washington Township.

Hamilton County—Delph & Chew have spudded in on the Sturdevant farm in Section 20, Washington Township. This farm produced quite a bit of gas a good many years ago, and showings of oil were reported at that time.

Harrison County—The Eureka-Indiana Oil & Gas Corp. has completed a shallow well on the David Farnsley lease on the bank of the Ohio River in Taylor Township; 800,000 feet of dry gas was found at 200 feet at the top of the Black shale. The same company intends shortly to drill to the Trenton on the anticline which it is said to have located. One or two other rigs are drilling in the vicinity of Bridgeport.

Lagrange County—J. W. Hunt has resumed drilling on the Shoup well.

Monroe County—B. F. Morgan and others will start a test to the Trenton in the southeastern part of the county. The Petroleum Exploration Co. also is expected to start a test on the Mahala Baxter farm in Section 20, Salt Creek Township. This will be east of the well which it recently abandoned on the State Life Insurance Co. lease. Same company, together with the Ohio Oil Co., completed a gas well in Section 8, Benton Township, at 876 feet, which gauged 1,200,000 feet.

Morgan County—The Ohio Oil Co. and the Petroleum Exploration Co. plugged their shallow test on the T. J. Ratts lease in Section 12, Ashland Township, northwest of Paragon. This was drilled to the Devonian.

Perry County—Roger E. Williams and others were down 480 feet in their No. 3 John Backer in Section 13 at the edge of Troy. The Perry Oil & Gas Co. is down 785 feet in its No. 1 August Braunicker. Conyers, Roetzel and Bugg completed their well on the Frank Cassidy farm in Section 25, Clark Township, at about 500 feet. It is producing 500,000 feet of gas from the Jackson and Barlow sands. The Ohio Oil Co. abandoned its William Epple test, 3½ miles northeast of New Boston in Section 8, Anderson Township, at about 900 feet. The Lee Petroleum Co. will survey its block of leases between Adyeville and Bristow.

Pike County—E. C. Bolds is drilling on the M. J. Atkinson farm in Logan Township. Rischer and others are starting a well on the Charles Crow lease, adjoining the schoolhouse at Alford. Town lots in Alford are being leased, as is the land in the direction of Petersburg. Another well is to be drilled soon on the Prentice Crow farm. The Mahutska Oil Co. completed its No. 5 Ford-Hill, in the northeast part of Section 31, Clay Township, at 1,344-57 feet, where it started at 25 bbls. Nelson Brothers are staring a test on a reported structure for the Gardner Petroleum Co., which took over the leases of the Shell Petroleum Corp. This well is on the William Fritz farm in Section 35, Lockhart Township. The Wohmer Oil Co. completed the largest well found in many years in Pike County on the Hale farm, 3 miles east of Petersburg; 4,000,000 feet of gas were found in the Brown sand. The well could not be packed for some time because of the pressure, which was over 500 pounds. The total depth was 1,121 feet. Harry Rischer and others completed No. 1 William Hill in Section 30, Washington Township, at a total depth of 1,134 feet. The sand was found at 1,114-23 feet and produced 50 bbls. of green oil, which commands a premium. William Boll and others are down over 800 feet in a well on the R. C. Hyneman farm in Logan Township. They finished their No. 3 Fred Lindy at 1,326 feet where it started at 10 bbls. This is in Location 31, Clay Township. In the same area Fred Hillis completed a well on the Neal Lindy farm, which produced both oil and gas from a depth of 1,575-91 feet. No. 4 Charles Miller in Section 31, Clay Township, drilled by Talliaferro, produced 280,000 feet of gas. The Aiser Oil Co. is planning to drill another well on the Miley farm in the Oatsville Pool. It completed its No. 1 Charles Rumble, Lot 13, Logan Township, at 1,352 feet, where it started at 7 bbls. C. E. Wohmer and others found a dry hole in the No. 2 R. and F. Morrison in Washington Township. They are down 200 feet in No. 1 Ed. Scales, just southeast of Alford, where they plan to drill several wells. They are also planning to start on the No. 2 James Thomas in the same territory.

Spencer County

The Packard Oil Co. abandoned its No. 6 Lee Carlton after it had been drilled into water. It was producing about 10 bbls. This company is planning to make several tests surrounding its present production. Missouri-Kansas Pipe Line Co.

(Continued on Page 156)

A Test That Again Asks You

What Happens to Your Crude When the Sun Shines?

If you would make this simple test you would be enlightened. Partly fill a five-gallon bottle with fresh crude. Insert a tube through the cork and tie a large rubber balloon on the outside end of the tube and set this bottle in the sun. The cork and tube should be sealed in the bottle with sealing wax or shellac. As the sun shines brightly on the crude the lighter fractions, in their endeavors to escape, will pass through the tube and inflate the balloon. Were they not caught by the balloon they would evaporate.

If you would dash cool water over the bottle, the vapor would condense on the inside and the balloon would collapse, showing vacuum. *Now do you see what happens to your crude when the sun shines, and when it goes down?*

B.S.&B.

Perfection *Vapor Pressure* **TANKS**

This test portrays just what DOES happen when the sun shines, and especially at this time of the year is crude more subject to greater evaporation loss.

As the sun shines, it acts like a still; for the crude is heated and more lighter fractions are thrown off. Those light fractions will escape, unless properly retained, and if the pressure is greater than the tank can hold, the tank itself will bulge or "blow up" unless that gas seeps through leaky seams or an imperfect valve.

Then when the sun goes down or clouds appear, or there is a sudden shower, there is a contraction of the crude, instead of expansion, and a vacuum is created, as in the bottle test. Some tanks not built sufficiently rigid or strong cannot stand this excessive vacuum and the result is a collapsed tank.

Each B S & B PERFECTION Vapor Pressure Tank is rigidly constructed and amply strong.

Each is equipped with the B S & B Thief Hole Vacuum Pressure Valve which automatically operates at 16 ounces pressure or 2 ounces vacuum.

Thus your crude is protected from evaporation loss, and the crude maintained at well-head gravity.

B. S. & B. Safety Steel Walkways

Build stairways and walkways for permanence. The B S & B Safety Steel Walkways and Stairways are practical and fireproof. As simple to erect as building models from erection toys—Adjustable to any height or length, and portable. B S & B service includes erection, if desired.

Let us show with facts and figures how you can actually save money, as well as increase the efficiency of your production by the use of the B S & B PERFECTION Vapor Pressure Tanks. May we send a representative who is near you now to discuss this? Or may we send you explanatory literature? Just address Dept. B-28.

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Black Sivalls & Bryson INC.

BARTLESVILLE - OKLAHOMA

Our Watchword QUICK SERVICE

Many Dry Holes in Southeastern Ohio

Fewer Oil Completions, Best Well Making 160 Bbls. in Fallsbury Township, Licking County. Fair Muskingum Well

By Special Correspondent

PITTSBURGH, Pa., July 21.—Overproduction in Pennsylvania grade crude seemed a very remote possibility as late as a year back but since that time more than one factor contributed to it. Paramount among the causes are the modern methods of repressuring of sands by air, gas, or water flooding. As an example of this the Bradford district fields may be cited where the production was increased nearly 200 per cent.

The Pennsylvania Crude Oil Association is holding meetings in the various districts with a view of presenting the present phases of the industry and some plan of curtailment in daily production and further development.

There were fewer oil wells completed during the past week than there has been for some months, and while this may be due to the unusually large number of dry holes reported from the shallow sands in Southeast Ohio or the preponderance of drilling in the proven gas areas of West Virginia, it is believed that, with further recession in crude oil prices, the incentive is lacking.

SOUTHEAST OHIO

As has been usual the past year, the largest oil well completions were reported from Southeast Ohio, yet these were fewer. The best reported during the week was on a proven lease in the pool in Fallsbury Township, Licking County. Here in Section 13, I. S. Robinson and others completed No. 2 on the Samuel Mossholder farm to the Clinton at 3,024 feet and it produced 160 bbls. the first 24 hours after shot. The next in size was in the now well developed area in Hopewell Township, Muskingum County. In the northeast quarter of Section 5, the Hopewell Fuel & Gas Co. completed No. 3 on the James M. and Ezra H. Sidle farm to the Clinton at 3,210 feet and after shot it produced 115 bbls. the first day.

In other counties of Southeast Ohio the results were for the most part a disappointment. In Ashland County there were dry holes only. The Great Lakes Oil Co. completed No. 8 on the John P. Smith farm, Section 9, Lake Township, to the Berea at 793 feet, and it was dry. In the same township, but in Section 16, the company completed No. 4 on the W. S. Wolf farm to the Berea at 691 feet and it was also dry.

In Athens County the Ohio Fuel Gas Co. completed its test of the Charles and Thomas C. Townhouse farm, Section 15, Lee Township, to the grit at 1,238 feet and it produced only one-fourth barrel the first 24 hours after shot and was abandoned. In Section 18, 3 miles north of Canaanville, Canaan Township, Charles D. Mosher and others completed No. 7 on the Lena L. Bean farm to the first Cow Run sand and it was dry. No. 6 on this farm was reported a 4-bbl. pumper and was brought in two weeks ago. The first Cow Run sand is found at 360 feet.

In Holmes County the Ohio Fuel Gas Co. completed its test on the Valentine Mellor farm, in the NW of Section 20, Richland Township. It was drilled to the Clinton at 3,650 feet and was dry.

In Medina County, there were three completions, all in the shallow Cow Run sand. The Oko Oil & Gas Co. completed No. 37 on the Henry Essig farm, Lot 2, Section 13, Chatham Township, at a depth of 400 feet and after being shot it produced 7 bbls. the first 24 hours. In the same township, Section 9, the same company completed No. 11 on the Sanford and Watson farm at 340 feet and it produced 5 bbls. after shot the first day. In Lot 5, Section 15, of the same township, Curtis and Akens completed their test on the Milton V. Garva farm at 352 feet and it was dry.

In Morgan County, W. S. Harris completed No. 2 on the Eleanor Gifford farm, 2 miles south of Chesterhill, Section 13, Marion Township. It was drilled to the first Cow Run sand and looks good for a 3-bbl. pumper.

In Muskingum County there were three additional completions. In the NE of Section 20, Perry Township, the Atha Oil Co. completed No. 4 on the L. M. Bryan farm to the Niagara lime at 3,200 feet and after shot it produced 11 bbls. the first 24 hours. In Union Township of this county, the same company drilled its test on the John Pitts farm to the Clinton sand at 4,570 feet and it is a gasser estimated at 300,000 feet. This farm is in the NE of Section 17. In the SW of Section 12, Newton Township, the Melick Oil Co. completed its second well on the James Ford farm in the Clinton, 3,635 feet, and it is a dry hole.

In Perry County, the Allegheny Oil Co. completed No. 17 W. C. Longstreth farm, Section 32, Pleasants Township, to the Berea at 1,132 feet. After shot it produced 5 bbls. the first 24 hours.

In Vinton County the Powers Oil & Gas Co. drilled No. 6 on the Cameron S. Clark farm, Section 4, Knox Township, to the grit at 988 feet and it produced 4 bbls. the first day after shot.

WEST VIRGINIA

There were but a few oil well completions reported from this State during the past week and they were small in size; the completions were mainly gassers. There was one outstanding completion even though it proved disappointing. In Clay County, Henry district, the scene of many good producers, especially on the O. D. Stockley farm, the United Fuel Gas Co.'s deep well on the Brown, Goshorn and Swan reached a total depth of 5,345 feet and it is dry. The Big lime was reached at 1,916 feet. A small show of oil and gas was encountered at 1,899 to 1,904 feet. The Big Injun was at 1,966 feet.

The oil completions were scattered. In Clay County, the Virginian Gasoline & Oil Co. completed No. 4,247 Brown, Swan and Goshorn to the Big Injun and it is showing for a 10-bbl. well from that sand at a depth of 1,928-57 feet. This is in Henry district. In Boone County, the Pure Oil Co. completed two producers. On the L. R. and P. tract B, Sherman district, No. 32 was completed in the Berea at 3,382 feet and is good for 10 bbls. a day after shot, and on the same tract, No. 36 reached the Berea at 3,125 feet and it is reported good for 9 bbls. natural.

In Ritchie County, the New York Petroleum Co. reached the Big Injun at 1,845 feet in its deeper drilling of the test well on the E. A. Stephens farm in Grant district. It showed for about 2 bbls. a day between 1,820-28 feet. In Jefferson district, Nicholas County, the Hope Construction & Refining Co. completed No. 1,139 Lewis Land & Coal Co. property to the Big Lime at 2,577 feet and it is showing for an 8-bbl. producer.

In Lewis County, the Hope Natural Gas Co. completed No. 1 on the J. A. Caruthers farm, Hurst district, to 1,590 feet, the Big Lime sand, and it is showing for 5 bbls. a day and they are testing the sand.

One of the best gas wells reported during the week was brought in by the Carnegie Gas Co. on the waters of White Oak Creek, Union district, Ritchie County, in its test on the Frank E. Prichard farm. It was drilled to the Big Injun at 2,203 feet and is estimated good for 1,000,000 feet.

In Cabell County, the United Fuel Gas Co. completed No. 4,244 on the J. A. Dunkle farm, Barboursville district, deeper from 3,052 feet to 3,115 feet and has a light gasser.

In Clay County, the Hope Natural Gas Co. drilled No. 9 Mary S. Wetheral farm in Pleasants district to the Berea at 2,058 feet and it is dry.

In Gilmer County, the same company completed No. 7,493 on the Elihu Stump farm in Center district to the Berea at 2,339 feet and it is dry and abandoned. In Jackson County, Washington district, Lee Sheppard and others drilled their test well on the Wesley Streets farm deeper from 2,640 to 2,707 feet in the Berea and found no improvement and it was abandoned.

In Marion County, Mannington district, W. D. Eschenbaugh reached the top of the Big Injun in his test on the Harry D. Straight farm and shut down at 2,211 feet with a light show of gas at 2,099 feet.

In Ritchie County, Godfrey L. Cabot completed his well, No. 48-A W. R. Baker in Murphy district to the Big Injun at 1,984 feet and it is showing for a light gas well. In the same county, the Warrior Petroleum Co. in drilling No. 7 on the Cornelia Storrs farm in Union district found gas in the Big Injun at 2,190-93 feet. At present the well is reported at 2,200 feet and incomplete.

In Wetzel County, Cochran and Cochran drilled their test on the Harry M. Antell farm in Church district to a depth of 3,506 feet and it is dry. In Boone County, Washington district, the Osborne Development Co. has drilled its well on the Rosa B. Harless farm to the Big Injun at an even 2,000 feet and has a small gas well at that depth.

Starting and Drilling New Tests

There are a considerable number of new locations and rigs up for new tests, mostly in the gas areas of West Virginia. Among them are the following:

In Calhoun County, Sherman district, C. B. Lewis and others have a rig up for their test of the L. J. Morris farm. In the same district, the Mid Penn Oil Co. has a rig up for No. 1 in the Charles Poling farm. In Lee district of this county, Godfrey L. Cabot is building a rig for his test of the S. R. Roberts farm, and F. F. McIntosh and others are drilling at 1,790 feet their test of the K. L. Whytsell farm and are due soon in the Injun at 1,940 feet. Clem Morris and others are shut down for water at 520 feet in their No. 1 test on the Baptist Church lot in Sheridan district. In Center district, A. H. Jackson has a rig ready for his No. 1 on the F. S. Means farm. In Washington district, of Calhoun County, Godfrey L. Cabot is building a rig for a test on the George Hunt farm.

In Clay County there is but one new rig reported, and it is in Union district, where Godfrey L. Cabot is building one on the Blue Creek Coal Co. property for a test.

In Lincoln County, the Woodyal Gas

(Continued on Page 119)

OHIO COUNTY WILDCAT IS FEATURE OF WEEK IN KENTUCKY DISTRICT

By Whit

Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., July 21.—The feature of the Western Kentucky Field was the bringing in of a wildcat by N. W. Shiarella, trustee for Lowman & Daley and Miller & Dameron and himself on the Clint Park farm between Clear Run in Ohio County, and Rough River and south of the Rough River fault, not far removed from the Illinois Pipe Line, southeast of the Barnett's Church Pool, and southwest of Taffy where 16 feet of rich Stray oil sand and 14 feet of gas sand were drilled into at a total depth of 380 feet. The well is estimated good for 100 bbls. or better and opens up a new area for future development regardless of being on the south side of the fault, where the territory has been condemned to a large extent since the Hartford-Owensboro Fields were opened up. This well will no doubt bring about an active drilling campaign on the south side of the present producing area. The sand in this well as well as the log very much resembled the Barnett's Creek Church Stray sand pool, which has been the richest pool in the Owensboro-Hartford Field.

Regardless of the extreme heat and scarcity of water there were 33 completed wells reported, of which 20 were producers with an initial of 802 bbls., 7 dry holes and 6 gas wells. The week's work was confined to five counties. Ohio County leads with 14 completions, 9 oil wells with an initial of 317 bbls., 2 dry holes and 3 gas wells. Daviess County shows 8 completions, 7 producers with 412 bbls. initial production, 1 dry hole. Henderson County had 5 completions, 1 producer with 4 bbls. initial, 2 dry holes and 2 gas wells. McLean County, 1 well with 65 bbls. initial, and the Glasgow Field of Barren County, 5 completions, 2 producers with 4 bbls. initial, 2 dry holes and 1 gas well.

The best completion for Ohio County was the test drilled by N. W. Shiarella, trustee for Lowman & Daley, Miller & Damron and himself, on the Clint Park land, near Clear Run, which is reported better than 100 bbls. from a shallow depth of 380 feet.

Leeper Oil Co.'s No. 3 on the Blackerby farm, in the Maxwell Pool, is reported showing for 30 bbls. at 950 feet. Same company's No. 4 J. W. Greer farm, in the Whittaker Pool, is rated good for 25 bbls. S. H. Russell has a gas well in his test on the Martha King farm in the Deanfield Pool. S. R. Berry and others' No. 3 on the Will Coleman farm, in the Howard Pool, produced 22 bbls. at 400 feet deep. Chester Oil Co.'s No. 11 Martha Medcalf farm, in the Deanfield Pool, produced 25 bbls. the first 24 hours at 410 feet deep. Cumberland Petroleum Co.'s No. 7 W. Hamilton farm, in the Buford Pool, is reported dry. This is a Stray sand development.

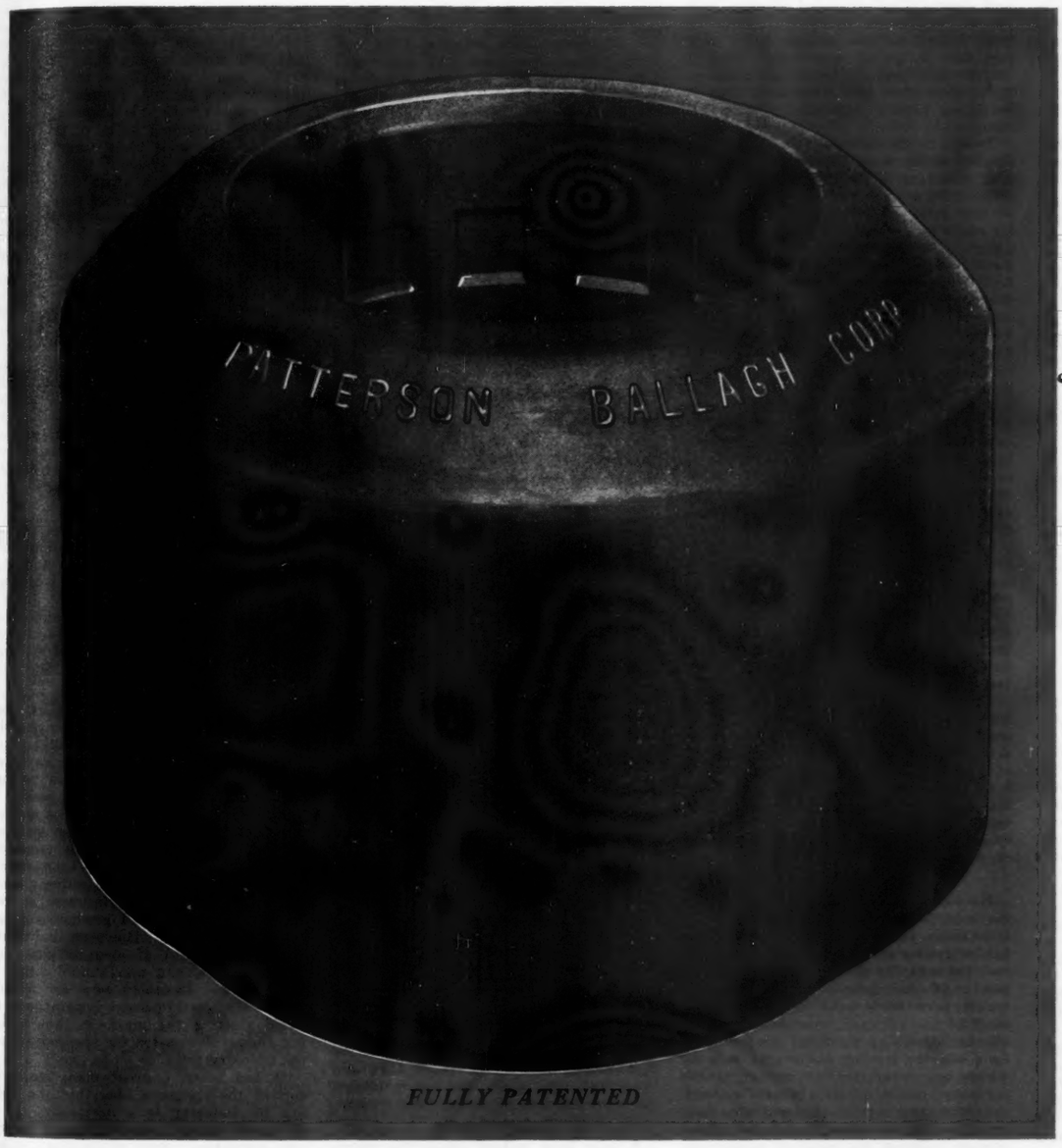
Brown and others' No. 4 T. L. Hickey farm, in the Taffy Pool, is reported at 10 bbls. the first 24 hours.

James C. Ellis and others are keeping the drill moving along at a rapid clip and brought in quite a number of wells. This firm's No. 3 J. P. Morgan farm, in the Adaburg area, is reported at 25 bbls.; No. 2 Malvin S. Bartlett 35 acres, near Taffy, dry; No. 5 E. Perry Talley 105 acres, Haynesville Pool, 25 bbls.; No. 2 William Mills 80 acres, same pool, gas at 440 feet; Nos. 3 and 4 Crow-Commer farm, Howard Pool, 30 and 35 bbls. initial, and No. 2 C. A. Kelley 40 acres, Deanfield Pool, gas at 724 feet.

James C. Ellis and associates have 421 wells on the pump on the many leases operated by them in the Owensboro Field.

(Continued on Page 156)

If they cost $200 each they'd be worth it!



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The Original *all rubber* Bettis Protectors

Oil Industry's Story Told Over Radio

President E. B. Reeser of American Petroleum Institute Addresses 34 Stations of Columbia Broadcasting Co.

By E. B. Reeser
President, American Petroleum Institute*

It is a privilege to speak for the petroleum industry in the series of programs of the Columbia Broadcasting System on the "Romance of Industry." I expect to tell the radio audience a few facts about petroleum which I hope you will remember as you drive your automobile to filling stations—some facts which are indicative of the wide range of endeavor essential to the seemingly simple process of supplying you with gasoline.

The use of petroleum dates back to the beginning of history. It is one of the oldest natural products used by man. It was as a curative for man's illness that petroleum principally appears in legend and early history.

The people of ancient Japan and China, Judea and Persia used petroleum in a primitive way centuries before the Christian era. Noah's Ark was caulked with a form of petroleum gathered from the shores of the Dead Sea. Job told of a rock which "poured me out rivers of oil." Nehemiah is supposed to have used oil for altar fires—he called the substance "Nepthar," from which our present word "naphtha" was derived.

Although petroleum has been known to exist for centuries, we are not sure from whence it came, what its origin, or how extensive the supply. This does not mean that nothing is known about petroleum. On the contrary, we know a great deal about it, but petroleum lore is ever changing. Every generation, every decade, indeed every day, adds to our knowledge, disclosing errors or deficiencies in our conclusions of yesterday. We know that petroleum is composed principally of hydrocarbons; that is, it consists essentially of the two elements—hydrogen and carbon.

Many Kinds of Petroleum

There are many kinds of petroleum. In fact, nearly every newly discovered area presents new problems as to how the products should be treated in order to make the by-products acceptable in common trade. It is sometimes found to be thick like tar, sometimes oily and heavy like amber-colored cream, and sometimes light and volatile like the gasoline which it yields. In color it ranges from almost black, yellow or brown, through shades of green, to colorless. It commonly is classified as paraffin base or asphalt base, from the nature of the residue left on distillation; or if it contains both paraffin and asphalt, it is known as mixed base. It occurs, and is usually found, with a natural gas beneath the surface of the earth. It is known to exist in some localities at a depth of 10,000 feet below the surface.

Seventy years ago, on August 27, 1859, the petroleum industry in the United States was represented by one 69½-foot hole in the ground, capable of producing a maximum of 15 bbls. of crude oil each day. The total investment was only a few thousand dollars. In December of that year another oil well was completed. The total amount of oil produced in the United States in 1859 was less than 2,000 bbls. The market price of the crude oil was then 50 cents per gallon, or $21 per barrel. The only commercial use to which the oil could be put at that time was the manufacture of medicinal liniments and kerosene.

Seven hundred thousand wells have been completed since 1859, an average of 10,000 wells per year. Of this number one-half were either unproductive or have been exhausted or abandoned. Notwithstanding all the experience of 70 years and the increased knowledge pertaining to the location of oil pools, the percentage of holes completed in 1929 in which no oil was found was only 30 per cent

To drill an oil well in the United States one must expend anywhere from a minimum of $1,500 to a maximum of $250,000, depending upon the location and depth. The estimated average cost per well is $25,000. In 1929, 26,000 wells were drilled. Of this number 8,000 were dry, that is, no oil was found. Thus it will be seen that the petroleum industry spent more than $200,000,000 in 1929 in searching for raw material without return.

Today, in 19 states, there are roundly 350,000 wells, some nearly 2 miles deep, and producing in the aggregate about 2,500,000 bbls. of crude oil each day. The market price of Mid-Continent 36 gravity crude now averages about 3 cents per gallon, or $1.30 per barrel. The investment in oil lands and producing properties alone aggregates $5,500,000,000; and the total capital investment of the petroleum industry in lands, wells, equipment, and facilities located in the United States amounts to $12,000,000,000.

Three hundred forty refineries are manufacturing gasoline, lubricants, and innumerable other products. More than 100,000 miles of pipe lines, 145,000 oil company owned railroad tank cars, 484 large ocean-going tankers, thousands of small boats and barges, and tens of thousands of automobile trucks transport the crude and refined oils figuratively from oil farm to fireside.

Thousands of steel storage tanks, large and small, scattered throughout the country, store the crude and manufactured products. It is estimated that there are 350,000 separate and distinct places where a motorist can buy gasoline and lubricating oils at retail, and that these retail outlets are equipped with 800,000 pumps and tanks.

From 2,500,000 to 3,000,000 of your fellow citizens are actively engaged in earning a livelihood for themselves and their dependents by aiding in the conduct of the business operations of the petroleum industry. Probably another 2,250,000 American citizens are directly interested in this industry as owners of producing royalties or of oil company stocks or other securities.

Varied Products

Kerosene and liniments no longer are the sole products of petroleum. Today it yields a variety of products from the lighter grades of aviation gasoline to the residual coke for firing ovens. It is the source of the gasoline and distillates which have made possible the development of the automobile industry; of gas oils for enriching artificial gas; of furnace oils for heating homes; of fuel oil which has revolutionized marine transportation, made possible cheap railway operation and service in territories barren of other fuel, and, through the Diesel engine, reduced the cost of power developed in stationary plants; of lubricating oils and greases; of mechanical oils, insecticides, paraffin wax for candles, sealing wax, chewing gums; of naphthas for soaps and other cleansing agents; of asphalt, pitch, and road oils for highways and roofing; and of other specialized by-products for many different uses.

Gasoline is the principal commercial product. It is the product which the public sees and hears most about. It is the fuel for almost all of the internal combustion engines in existence—the universal fuel for more than 35,000,000 passenger cars and commercial automobiles, 27,000,000 of which are in the United States. About 16,000,000,000 gallons of gasoline were consumed in the United States during 1929.

Compared with groups of commodities for which price statistics are published by the United States Department of Labor, gasoline is the cheapest commodity in general use in this country. Figures of the department indicate that there was an increase of 38 per cent in the index number of wholesale prices for all commodities between 1913 and 1929. Shoes increased 117 per cent; milk increased 93 per cent; bread increased 66 per cent; eggs increased 46 per cent; butter increased 40 per cent; sugar increased 19 per cent—but gasoline decreased 2 per cent.

Price Comparison

The price paid by a motorist, on July 1, 1930, for a gallon of gasoline delivered into his automobile tank at a retail service station in Butte, Mont., was 27½ cents, or a net retail price of 22½ cents, since 5 cents represented the gasoline tax. On approximately the same date, the motorist in Burcharest, Rumania, with no sales tax, paid 29½ cents: in Warsaw, Poland, with no tax, 36 cents; in France, with no tax, from 35 to 43 cents; in Germany, with no tax, 32 cents; and in England, with no tax, 26 to 30 cents—in terms of American gallons. Bucharest and Warsaw are within a stone's throw of some of the principal producing and refining districts of Europe.

The volume of gasoline production since 1913 has increased almost 1,000 per cent; but due to the growing efficiency of the industry through the constant improvement in its producing and refining methods, it is one of the few commodities that have shown comparative price moderation from the beginning of the war down to the present day.

When buying gasoline at retail, the public should definitely bear in mind the gasoline tax paid. In 1921 the aggregate amount collected from the public as a sales tax on gasoline amounted to only $4,700,000. It is estimated that in 1930 the total tax which state and local governments will add to the price paid for gasoline will amount to $550,000,000. This sales tax now averages 25 per cent of the retail price of gasoline. The petroleum industry does not oppose the levy of such a tax where all the revenue is used solely for highway construction and maintenance, but it does oppose the fixing of a tax rate per gallon beyond reasonable bounds or where the rate the consumer must pay is out of equitable proportion to the price of the gasoline. Unless state legislatures exercise some degree of restraint and fairness in this form of sales tax, it is our prediction that they will kill the goose that laid the golden egg, or at least set in motion the economic law of diminishing returns.

Future Supply

I have been talking about the petroleum industry in the United States; but the business of producing, refining, transporting, and marketing petroleum and its products is a world industry. The United States has surpassed other countries in developing and using its petroleum resources, because nature has richly endowed our country with oil; because the major demand for petroleum products is here, and because of the initiative and ingenuity of American oil men. American oil has always found its way to the consuming markets of the world. It is, therefore, obvious that our petroleum resources are being drawn upon at a faster rate than those of other countries.

The Federal Oil Conservation Board, composed of four members of the President's cabinet, points out that "if the international comparison is made, this country is depleting its supply several times faster than the rest of the world. How real is the danger expressed in this fact and what remedy can be devised," says the board, "are questions confronting the American people as they plan for the future. At least the effort should be made to propose measures that will minimize and delay the undesirable future outcome of this excessive drain upon a limited, though admittedly large, reserve. In this planning for the future the principal units of the oil industry itself, with their large refinery and distribution systems, both domestic and foreign, have a stake second only to that of the nation, and may well be counted on to join forces in the common interest."

True conservation means that our natural resources should be drawn upon without waste and in orderly response to economic demand. We cannot have our oil and burn it too; therefore, for national security and public convenience and comfort, we must make it go a long way for this and future generations. Waste may be physical or economic. President Coolidge said, in 1924, that "overproduction in itself encourages cheapness, which in turn leads to wastefulness and disregard of essential values."

Need for Stability

For a number of years the petroleum industry, like other basic industries, has suffered from overproduction and has struggled with the problem of balancing production with consumption. In my judgment, business generally cannot get out of its present slough of despondency until industry, with the help of Government and public, has reached some such degree of stability.

The petroleum industry has by local co-operative agreements, as an expediency, and with the approval of governmental conservation agencies, curtailed its producing operations. It is holding the unmarketable crude oil which it could produce, if necessary, in its natural reservoir, the ground; and is bringing out only such quantity as is currently required to meet demand. Co-operative agreements with respect to refinery operations, or affecting curtailment in the manufacture of refined products, cannot lawfully be made. However, individual refiners cognizant of overproduction, as good business, can and should adjust—and in some instances now are adjusting—their own private operations to avoid glutting the markets, thus avoiding financial disaster for themselves and the industry.

It has taken a great many years to correct the mistaken idea that the modern oil industry is a monopoly. It is the most highly competitive of American industries. Part of its troubles are due entirely to this fact. No other industry has been called upon to make so sizable a capital outlay and to expand so rapidly within so short a time as has the oil industry within the past 20 years. No other industry has experienced so large an influx of public money; into no other have entered so many new and independent competitive interests.

The American oil industry now is launched definitely upon a new era of co-operative effort to solve its own problems. As competitors contribute to the common interest, so will each and all profit. Industrial stability is in the public interest; and efforts to effect it in the petroleum and, in truth, every industry should have the sympathetic support of the Government and the public.

*Delivered July 19, 1930, over 34 radio stations of the Columbia Broadcasting System.

Pipe Line Construction News

CONSTRUCTION PROGRAM OF CITIES SERVICE CO.

An extensive construction program for increasing the service capacity of the entire pipe line system of the Cities Service Gas Co., natural gas subsidiary of the Empire Companies, has just been announced.

The expansion program, which is for the purpose of insuring an adequate supply of natural gas to meet the peak winter demands, includes the addition of 24 new compressor station units of 1,000 horsepower each or a total of 24,000 horsepower to the compressor stations in Oklahoma, Texas and Kansas which assist in transporting the natural gas along the lines which serve Wichita, Lawrence, Kansas City and other northern markets.

The construction of new compressor stations at Blackwell and at Drumright in Oklahoma; an extension of the Oklahoma City 20-inch line from Dilworth, Okla., to a point south of Wichita; improvement of the Dilworth-Cambridge 16-inch line for high pressure service and the laying of 15 miles of 16-inch pipe line from Independence, Kans., to Joplin, Mo., is included in the program. All con-

(Continued on Page 146)

PLAYA DEL REY LINES

LOS ANGELES, Calif., July 19.—That greater possibilities are expected from the Venice Field discovered last December by the Ohio Oil Co. is indicated by the announcement that the Union Oil Co. is grading a right of way for the construction of an 8-inch pipe line for oil from its Playa Del Rey lease.

Work of grading the right of way is under way and material for the pipe line has been purchased and will be trucked to the scene of operations at once. No word was forthcoming from Union as to where the pipe line will be connected, but it was stated that it would be 4½ miles in length and would connect with the company's existing facilities. The entire work is scheduled to be completed in 30 days.

The question of handling the oil at Venice is so far the greatest worry of the majority of the operators. The Ohio Oil Co. has solved its problems through construction of a pipe line that connected with the Standard Oil Co.'s line to El Segundo. The company has also completed a series of lines within the limits of the new field and has other franchises permitting it to construct necessary pipe lines.

NEW YORK STATE GAS LINE

ELMIRA, N. Y., July 19.—Approximately $250,000 will be spent by the Columbia Gas & Electric Corp. to provide an outlet for the gas being produced by the five wells in Altay and the town of Tyrone. A contract has been let to Rich & Co., pipe line contractors of Bradford, Pa., to lay a line from the wells to connect with the line which runs through Horseheads.

Approximately 100 men are already in the field making preparations to lay the line. Three camps are being established, one northeast of Horseheads, another west of Montour Falls and the third in the town of Tyrone. Pipe is being shipped to the various points by the carload and the ditch-digging machinery is on the way.

The pipe to be used in the new line is 8 inches in diameter. The sections will be welded and painted. It is estimated a mile of pipe will be laid each day under favorable conditions.

The new line will bring an additional supply of gas to Millport, Montour Falls, Watkins Glen and Dundee. The franchises for gas service to these villages were formerly held by Attorney General George G. Reynolds of Elmira, who recently sold his franchises to the Columbia company.

PROPOSED GAS LINES IN CANADA; ONE 450 MILES; ANOTHER 290 MILES

CHATHAM, Ontario, July 19.—Three propositions have been placed before the city of Regina, Saskatchewan, for a supply of natural gas. The city has heretofore used electric power for domestic purposes, various proposals for the supply of artificial gas being rejected in the belief that ultimately natural gas will be available.

One proposal by the Northern Utilities Co. is for the immediate construction of a natural gas line from an unnamed field in Alberta, with a guarantee to deliver natural gas to Regina at an average rate of 57½ cents. The company is stated by C. O. Moore, its representative, to be backed by New York and Texas interests already engaged in the natural gas business in Texas. Similar rights are being sought in Moose Jaw, Swift Current and other towns in southern Saskatchewan, the project involving about 450 miles of construction, with complete distributing systems in all the communities served. Gas is to be delivered before the end of 1931.

The Eagle Butte Oil Co. of Medicine Hat, backed by the C. E. Roth interests of Independence, Kans., has been in touch with the Regina authorities for many months. This company has proven gas production in the Cypress Hills near Medicine Hat, and is drilling its No. 2 well. About 290 miles of line would be required to serve Regina and intermediate points.

The Dominion Gas & Electric Corp., whose subsidiaries now supply Calgary, Edmonton and other Alberta cities, is asking franchises for Regina, Moose Jaw, Swift Current and Saskatoon. Under its proposal pipe line work would be started immediately. The system would primarily utilize waste gas from the Turner Valley Field, but it is planned also to develop new gas areas in Alberta and Saskatchewan. An initial pipe line expenditure of $17,000,000 is involved. It is understood the company will build a new line to link with its existing line from Bow Island to Calgary. American Commonwealth Power Corp. and American Utilities & General Corp., jointly control the Dominion Gas & Electric Corp. The company holds gas reserves estimated by engineers at 175,000,000,000 feet and potential gas reserves of several times this amount.

PERMITS FOR GAS LINES IN SOUTHEAST COLORADO

DENVER, Colo., July 19.—An application for permission to construct natural gas pipe lines to serve southeastern Colorado towns from wells in Stevens County, Kansas, has been filed with the public utilities commission by A. J. Hardendorf of Lamar, Colo.

The application proposes to build one line west crossing the Colorado-Kansas State line and going up to Lamar. This would serve other Prowers County communities between the State line and Lamar. The other line would cut the State line to the south and terminate at Springfield, Baca County.

Twenty-five miles of 8-inch pipe and 66 miles of 6-inch pipe would be laid. The capacity of the line at Lamar would be 4,900,000 feet of gas and the estimated peak load at the same point would be 2,054,000 feet.

Mr. Hardendorf also filed an application for permission to construct and operate natural gas distributing systems in Lamar and Wiley, both in Prowers County, and stated that similar applications to serve other communities in Baca and Prowers Counties would be filed later. The only utilities operating in that section of the State are furnishing electric light and power, the petition stated.

AJAX PUMPING STATIONS

The Ajax Pipe Line Co., Tulsa, which is engaged in a $20,000,000 pipe line project to transport oil from Oklahoma to St. Louis, has awarded the Austin Co., engineers and builders, a contract for the construction of nine pumping stations along the line, starting at Pryor, Okla. The work is under way. The cost of the construction of the stations will approximate $200,000. The stations will be equipped with 10-ton, 5-ton and 1½-ton cranes.

MAGNOLIA MAY BUILD LINE INTO HOBBS POOL

FORT WORTH, Tex., July 21.—Announcement of another pipe line from Winkler County, West Texas, to the Hobbs Field. Lea County, New Mexico, attracts considerable comment to these producing areas, as they are so closely related in production, curtailment and many other problems, in crude oil prices, and the transportation of crude, for all oil run from Hobbs now traverses part of Texas through the lines which run on to the coast from tank farms in the various areas of the Permian Basin. The Hobbs production thrown upon the market greatly affects the West Texas crude prices, or would if proration had not been put into effect in the Hobbs area, and production held at a minimum.

This new line to be constructed is to be an 8-inch, by the Magnolia Pipe Line Co., which already has an 8-inch main line running from the Hendricks Pool in Winkler County to a large tank farm at Midland, thence southeast to the Gulf Coast. Oil from Hobbs will be carried to the coast via this trunk line after it is brought down to Winkler County through the new 8-inch line. Three lines are now serving the Hobbs Field, running oil through Texas to the Gulf Coast, and the Magnolia line is the second to be reported to be built in the near future. Cost of transporting crude from Hobbs to the Gulf is 52½ cents per barrel, which includes 2½ cents for loading on the tankers, 10 cents for gathering charge and 40 cents for carrying charge.

OTTAWA-SEDALIA CONTRACT

H. L. Lemon & Co. have been awarded a contract to build 110 miles of 12-inch solid welded gas lines for the Cities Service Gas Co. from Ottawa, Kans., to Sedalia, Mo. Two crews started construction July 7, one breaking ground at Sedalia, and the other at Harrisonville, Mo. At Ottawa the line will connect with the 20-inch line out of Texas. This line is built to supply natural gas to Sedalia, and upon completion the artificial gas plant will be dismantled.

TEXAS-CHICAGO LINE CONTRACTS AWARDED

First contracts for the construction of the 1,000-mile 24-inch Texas-to-Chicago pipe line have been awarded by the Continental Construction Co., Professional Building, Kansas City, Mo., to Sheehan Brothers, Tulsa; Bechtel & Kaiser, San Francisco, Calif.; Ford, Bacon & Davis, Inc., New York, and Smith Brothers, Dallas, Tex.

The Continental Construction Co., a Delaware corporation, was formed by Cities Service, Insull, Southwestern Development, Standard of New Jersey, The Texas Company, Skelly, Phillips and Columbian Carbon, to construct this natural gas line. These companies have in Texas, Oklahoma and Kansas a supply of natural gas available to this line said to be in excess of 7,000,000,000,000 feet and plan to serve over 50 cities and communities en route.

Starting from a point in Moore County, Texas, this line will run north through the Oklahoma Panhandle to a point near Meade, Kans., then in a northeasterly direction across the State through Washington County to Platsmouth, Nebr., where the line will cross the Missouri River.

Across Iowa in an east-northeasterly routing, to cross the Mississippi near Muscatine and on east through Illinois, passing a short distance south of Chicago, where a connection with the Insull systems will be made, then to other markets.

Construction companies will use all local labor available in order to benefit as far as possible the residents of the cities, towns and communities through which this line will pass. An appreciable part of the $100,000,000 to be expended on the line will be spent for labor.

Right of way along highways and across privately owned property has been secured and another major feature of the contracts is that this gas pipe line will be buried below the cultivation line, a distance of 3 or more feet below the surface, to prevent interference with the cultivation of land through which the pipe line will pass. Teams belonging to farmer residents adjacent to the pipe line are to be given preference in the hauling of construction materials at times which will not interfere with the cultivation of crops. These stipulations are voluntary on the part of the company and are in accordance with its stated program designed to alleviate wherever possible local unemployment.

This line will be a combination coupled and welded one. The S. R. Dresser Manufacturing Co., Bradford, Pa., has received the coupler order.

An order for initial compressor equipment for this line has been placed with the Worthington Pump & Machinery Corp. whose gas engine works is at Buffalo, N. Y.

AJAX CONTRACTS

Ajax Pipe Line Co., which is building an oil pipe line from Glenn Pool to St. Louis, has let contract for engines and pumps for the nine pump stations. Engines of Diesel type, 500 horsepower each, were awarded McIntosh-Seymour Co., Auburn, N. Y., and Worthington Pump & Machinery Corp., New York. Pumps, reciprocating type, with daily capacity of 32,500 bbls. each, were awarded Prescott Pump Co., Menominee, Mich., and Worthington Pump & Machinery Corp., New York.

GAS FOR CAYLEY

CHATHAM, Ontario, July 19.—The Canadian Western Natural Gas Co. of Calgary is laying 3 miles of transmission line and installing distributing system to supply the town of Cayley, Alberta.

Ogden Pool Tests Are Disappointing

Potential of Yates Pool Shows Gain. Possibility of Gaines County Production Being Extended in Southeastern Corner

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 21. — The Deep Rock or Ogden Pool in Andrews County has practically lost all of its former interest since the two drilling wells near the pool are considered out of sight of production. No. 1 Miles in Section 22, Block A-46, about 1 mile south of No. 1 King which is a small offset producer to the discovery well on the Ogden ranch, is now shut down at 4,765 feet making 2 bailers of sulphur water per hour at this depth, and No. 1 Mathis in Section 4, to the east of the Ogden discovery well, is also shut down at 5,088 feet, with no commercial production looking possible at this depth. No. 1 King, owned jointly by the Deep Rock Oil Co., the California Co., and Atlantic Oil Producing Co., made about 80 bbls. production in two days, July 19 and 20.

Penn Pool Proration

Penn Pool, Ector County, proration has been recommended by the Railroad Commission and the daily allotment set at 15,000 bbls. A meeting will be held in Fort Worth to determine the method of gauging wells and to discuss other matters pertaining to proration of the pool, this to take effect August 1. Roy Richmond, Yates Field umpire, will be umpire for Penn Pool also. Daily potential of field is now about 22,500 bbls.

The Sunray and Llano Oil Co.'s No. 1 Jones, in Section 6, Block 44, in the north end of the Penn Pool, Ector County, is plugging back to 3,812 feet to shoot for the second time. The first shot was only a small one, and brought no results, but the second shot will probably be large enough to have some effect on the tight lime. The water was cased off with lead wool, and the first shot was partly for the purpose of testing this plug. The well was first plugged back to 3,817 feet and a 40-quart shot set off. Three hours after the hole was shot and bailed, it filled 1,250 feet with oil. The first showing of oil was found at 3,731 feet. It is one-half mile due north of the Shell Petroleum Corp.'s new producer in the southeast corner of the section.

New Potential in Yates

The new potential of the Yates Pool, Pecos County, is set at 2,712,186 bbls. on a 12-hour gauge, a gain of 33,650 bbls. per day over the former period, which showed a potential of 2,695,361 bbls. The outlet of the pool is less than 2 per cent of the potential, and practically all pools under proration in Texas, as well as the Hobbs Field in Lea County, New Mexico, are modeled after the Yates proration plan of 75 per cent for average potential and 25 per cent for acreage.

The Roberts-Settles Fields in Howard-Glasscock Counties have been prorated to 11,113 bbls. per day, the amount the pipe lines connected to the field elect to take from July 16 to July 31. The Phillips-Coffee Pools in Glasscock County have been prorated to 5,970 bbls. per day, the amount the pipe line companies serving the field elect to take during the same period. The field is figured on 40-acre units, 25 per cent for acreage and 75 per cent for oil on the average potential for each unit.

Gaines County Possibilities

Humble Oil & Refining Co.'s No. 1 Carswell, in Section 23, Block A-27, P. S.L. Survey, Gaines County, attracted much interest when it had a light showing of oil from 4,150-55 feet. It topped the brown lime at 4,150 feet, and has an elevation of 3,413 feet. It is now drilling at 4,250 feet in anhydrite and lime. This test is on a line between the Deep Rock producer in Section 6, Block A-46, Andrews County, and the Hobbs Field, located on a possible "high" which may extend from the one producing area to the other, and has possibilities of proving production in the southeastern corner of Gaines County between the two areas.

Gulf Production Co.'s No. 9 O'Brien in the NE Section 16, offsetting Sid Richardson's No. 1, which extended the O'Brien Pool about 3 miles, has been running higher than the Richardson well but drilled into water sand at 2,681-88 feet and shut down at the latter depth.

The same company's No. 4-A Hutchings in the SW SE, Section 8, Block O, encountered 8,000,000 feet of gas at 2,455 feet which blew the tools up the hole. It is running 8 feet higher than No. 2 Hutchings, and opens up additional possibilities on school lands in this area.

Val Verde Test

O. O. Owens and the Atlantic Oil Producing Co.'s No. 1 Mills in Section 128, Block 1, I.&G.N. Survey, northwestern Val Verde County, is now down to 6,395 feet. The well was shut down for many months after encountering a showing of gas which was gradually dissipated, but drilling was resumed a short time back, and this area is now seeing a deep test which will be exceedingly interesting from a geological standpoint regardless of whether the test encounters oil.

The Tankersley Pool in Irion County recorded another small sweet oil producer when Carl Cromwell and others' No. 3 Nutt in Section 6, Gonzales County School Land was completed for a 70-bbl. well making a short extension to the pool. The sand was topped at 1,444 feet and the hole bottomed at 1,456 feet.

COMPLETIONS IN WEST TEXAS

Week Ending July 19

Crane County

Simms & Atlantic's No. 2-E University, top of pay 3,023 feet, shot 370 quarts from 3,024-3,120 feet, reshot 450 quarts 3,025-3,124 feet, initial production 120 bbls., total depth 3,124 feet.

Gulf Production Co.'s No. 1 Lassiter, top pay 3,035 feet; shot 330 quarts from 2,955-3,085 feet; initial production 165 bbls. in eight hours; total depth 3,085 feet. Same company's No. 77 McElroy, top pay 2,800 feet; shot 300 quarts from 2,800-3,014 feet; initial production 137 bbls.; total depth 3,014 feet. Same company's No. 78 McElroy, top pay 2,789 feet; shot 285 quarts from 2,789-2,928 feet; initial production 390 bbls.; total depth 2,957 feet.

Culberson County

Grisham & Hunter's No. 1 Garren, temporarily abandoned at 2,514 feet.

Ector County

Amerada Petroleum Corp. and others' No. 1-B University, top of pay 3,630 feet, shot 100 quarts from 3,632-3,702 feet, initial production after shot 802 bbls., total depth 3,702 feet. Humble Oil & Refining Co.'s No. 9 York, total depth 3,710 feet, plugged back to 3,688 feet, top of pay 3,656 feet, increase at 3,665 feet, shot 90 quarts 3,620-85 feet, initial production 340 bbls., total depth 3,710 feet.

Glasscock County

F. H. E. Oil Co.'s No. 3-C Roberts, top pay 1,820 feet, shot 20 quarts and 30 quarts from 1,820-40 feet, initial production 25 bbls., total depth 1,843 feet. Kirby Petroleum Co. and others' No. 6 Baker, top of pay 2,225 feet, initial production 1,536 feet, total depth 2,301 feet. California Oil Co.'s No. 2 Baker, top of pay 2,227 feet, initial production 912 bbls., total depth 2,320 feet.

Howard County

Merrick-Bristow Oil Co.'s No. 9 D. Roberts, top of pay 2,510 feet, shot 200 quarts from 2,500-50 feet, initial production 130 bbls., total depth 2,618 feet. Ward Oil Co.'s No. 19 D. Roberts, top of pay 1,354 feet, initial production 97 bbls., total depth 1,390 feet.

Irion County

C. Cromwell and others' No. 3 Nutt, top of pay 1,444 feet, initial production 70 bbls., total depth 1,456 feet. Kingwood Oil Co.'s No. 1 Sugg, dry and abandoned, total depth 7,818 feet.

Midland County

Pure Oil Co.'s No. 1 Hutt, dry and abandoned, total depth 4,227 feet.

Pecos County

Southern Crude Oil Purchasing Co.'s No. 2 Eaton, top of pay 1,575 feet, shot 35 quarts 1,578-95 feet, initial production 130 bbls., total depth 1,602 feet. The California Oil Co.'s No. 22 Yates, top of pay 1,245 feet, initial production 350 bbls., total depth 1,427 feet.

Ward County

Sun Oil Co.'s No. 1 Sealy, temporarily abandoned, total depth 2,563 feet.

WEST TEXAS PRODUCTION

Week Ending July 19

County—	No. wells	Bbls.
Andrews	1	124
Crane	344	34,825
Crockett	48	5,416
Ector	55	16,125
Fisher	7	1,800
Garza	5	51
Howard-Glasscock	517	29,203
Irion	3	226
Jones	73	1,350
Loving	24	1,770
Mitchell	146	2,200
Pecos	478	108,956
Reagan	258	18,975
Runnells	3	11
Scurry	5	11
Taylor	2	109
Upton	249	6,645
Ward	25	2,250
Winkler	596	68,660
Total this week		298,707
Total last week		304,591
Decrease		5,884

RUNS THROUGH TRUNK LINES

Company and location—	Bbls.
Atlantic, Houston	28,500
Gulf, Ranger	42,269
Humble, San Angelo	40,095
Humble, Station "A"	54,850
Illinois, Del Rio	26,250
Magnolia, De Leon	24,245
Pasotex, El Paso	10,125
Shell, Healdton	35,640
Shell, Houston	25,386
Texas, Houston	21,117
Total	308,477

RUNS TO WEST TEXAS REFINERIES

Amarillo Ref. Co., Pyote	964
Big Spring Ref. Co., Big Spring	1,346
Burford Ref. Co., Pecos	6,163
Blue Bonnet Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	8,109
Col-Tex Ref. Co., Colorado	6,500
Great Western Ref. Co., Big Spring	2,662
Humble O. & R. Co., McCamey	10,165
Midtex Ref. Co., Midland	None
Tonkawa Ref. Co., Pyote	1,042
Wickett Ref. Co., Wickett	125
Total	37,102

TANK CAR SHIPMENTS

Fox & Thorsen, from Mertzon	225
Thomas & Brann, from Grant City	300
Orient, from Hurdle	85
Southern Crude, from Wickett	20,473
Total	21,083
Total daily average distribution	366,667
Total daily average production (including Lea County, N. M.)	325,827
Daily average from storage	40,840

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended July 21

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks—
Deep Rock Oil Co. et al's No. 1 Mathis, 900 ft. from S and W, Sec. 4, Blk. A-46, Public School Land	Plugged back to shoot; total depth 5,088 ft.; makes approximately 10 bbls. oil and 25 bbls. water per day.
Deep Rock Oil Co.'s No. 1 Miles, 990 ft. S, 1,650 ft. E of NW cor., Sec. 22, Blk. A-46, School Land	Drlg. 4,655 ft.
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Fishing for bit 4,011 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; swabbed 476 bbls.; total depth 4,454 ft.; 3,500 ft. oil in hole; now agitating; swabbing 60 bbls. daily; pulled tubing; no production.
Maer & Staniforth's No. 1 Meador, C SW Sec. 8, Blk. A-41	Shut down 600 ft.
R. R. Penn's No. 1 Wilson, C, Sec. 20, Blk. A-37, School Land	Drlg. 4,100 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 Fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F.R.R. Sur.	Show oil 1,830 ft.; shut down 2,345 ft.
California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E	**Drlg. 4,820 ft.**
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18	Fishing 3,155 ft.
Williams & Williams Drlg. Co.'s No. 1 Noelke, 200 ft. from N and 1,020 ft. from E of Sec. 8, City of San Antonio Sur.	Machine.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,750 ft.

COKE COUNTY

Arkansas Fuel Oil Co.'s No. 1 Stepp, 1,020 ft. NE, 2,340 ft. W of SE cor., Sec. 35, Blk. 1-A, H.&T.C. Sur.	Drlg. 3,520 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 3,500 ft., contract depth.

CONCHO COUNTY

Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120	Machine.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock	Shut down 735 ft.

CRANE COUNTY

Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Show oil 2,995 ft.; shut down 3,993 ft.; rig burned.
C. C. Duffey's No. 1-C Cowden Bros. & Co., 2,640 ft. from S and 3,960 ft. from W of Juan Cordona Sur.	Moving in material.

(Continued on Page 110)

« « « « « « « IN CANADA

It is not a question of footage per hour, but rather one of inches per hour.

Then, too. time in the hole with each set of cutter makes a big difference.

Every round-trip made in the hard lime runs up operating expenses largely.

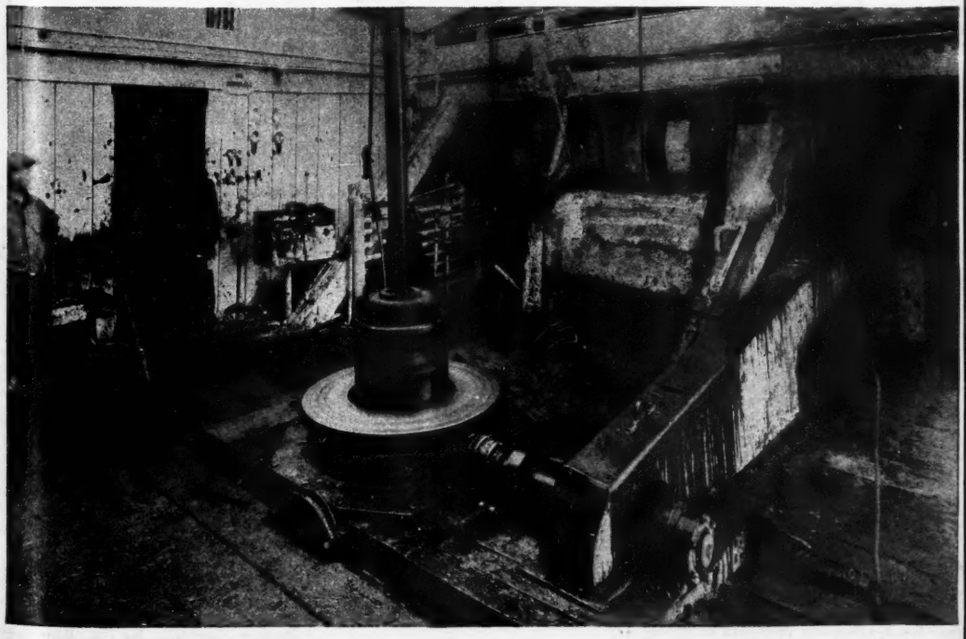
Reed Cutters are actually making footage with each set of cutters, as against inches made with other bits, and are averaging from forty to fifty per cent more hole per set of cutters, to say nothing of the saving effected through the re-use of parts taken from each set of cutters.

Records are available from many Canadian wells to substantiate the above statements.

▲ ▲ ▲

REED ROLLER BIT CO

HOUSTON, TEXAS - - - LOS ANGELES, CALIFORNIA



Wichita Falls Shows Record Decrease

New Territory Opened Northwest of Graham Pool, Young County. Two Interesting Completions in Shackelford County

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 21.—The Wichita Falls district showed one of the greatest decreases in daily production it has ever registered in any one week, this due to further curtailment in some of the flush areas, especially the Riggs Pool in southern Young County, and also because some of the pipe line companies serving the district cut their crude runs, nominating to run half of the oil to storage and run only 50 per cent through their lines. The last period's production figures show the first drop below 100,000 bbls. per day for a long time. The Panhandle district fell off only 862 bbls. with the Ranger district showing a drop of only 207 bbls.

Green Oil & Refining Co.'s No. 1 Morgan, in the northwest of T.E.&L. Survey No. 3,413, about 2½ miles northwest of the Nash and Windfohr deep producer in the Graham Pool, Young County, was completed for an initial production of 250 bbls. this week at a total depth of 3,856 feet, 1 foot in the pay, opening up considerably more territory to deep drilling and production, although offsets may prove dry holes as did some of those offsetting the Nash and Windfohr well which came in as a phenomenal producer of 1,000 bbls. per hour.

Nash and Windfohr's No. 1 Graham, in the Allen Hines Survey, 10 miles south of New Castle in southern Young County, is bailing 2 bailers of oil per hour at a total depth of 2,665 feet. Top of the oil sand is 2,660 feet. This test looked as if it might open up another area to production in Young County, a county which is extremely prolific in producing oil pools, and which has added many barrels to the oversupply, bringing proration to one of its latest uncovered pools, the Riggs Pool, 2 miles north of New Castle. This phenomenal shallow pool, producing from sand found from 650 to 750 feet, and with a daily potential of around 17,000 bbls., has been shut down to 1,345 bbls. per day.

Reducing Purchases

The Prairie Oil & Gas Co., following upon its general cut in purchases in the various states where it buys and transports oil, cut purchases in the Wichita Falls district, over a week ago, and this week the Continental Oil Co. announced it would cut its purchases 50 per cent, running the other 50 per cent to storage. The Continental Oil Co. is one of the larger purchasers of crude in this district, and the cut will affect many leases and operators.

Shackelford County saw a couple of particularly interesting wells completed this week in Nos. 3 and 4 Dawson and Conway, in Section 202, E.T.R.R. Survey, 17 miles west of Albany in the new Morris and Buie Pool, western part of the county. These two wells helped to swell the total daily production to 1,000 bbls. from 10 wells, although the pool is prorated to only 250 bbls. per day.

Two miles south of Albany on the Webb and Russ Ranch, which has already been the scene of some small oil production, the Big State Oil Corp. completed an 8,000,000-foot gasser which ran wild for two days before being brought under control.

Proration Plans

A meeting of the joint committee of six, made up of representatives of the Independent Petroleum Association, the Texas division of the Mid-Continent Oil and Gas Association and the purchasers of crude oil in Texas, will probably be held in conjunction with supervisors of the Railroad Commission at Austin on July 30 to discuss the general proration for the whole State. Operators and producers from all over Texas will be interested, especially many independents in the North Texas district where pools have been producing for many years, but the wells are exceptionally small and proration works a hardship. Special cognizance will probably be taken of these wells and pools, and other flush production pools curtailed to a greater degree in proportion to their output than these old pools. A special plea will be made to allow these smaller wells and old pools to produce as much as possible under a blanket proration for the State.

COMPLETIONS IN NORTH CENTRAL TEXAS
Week Ending July 19

Archer County

Bridwell Oil Co.'s No. 1 Turbeville was dry and abandoned at a total depth of 1,163 feet. Same company's No. 1 fee was dry and abandoned at a total depth of 1,603 feet. Campbell Oil Co.'s No. 1 Carr was dry and abandoned at a total depth of 1,345 feet. Golding & Cochran's No. 8 Brown encountered top of pay at 1,174 feet, was drilled to a total depth of 1,179 feet and had an initial production of 28 bbls. Massie's No. 3 Echols encountered top of pay at 1,143 feet and drilled to a total depth of 1,146 feet where an initial production of 40 bbls. was made. Maxon's No. 6 Green reached top of pay at 1,105 feet, was drilled to a total depth of 1,122 feet and had an initial production of 25 bbls.

Baylor County

Grisham and Barnsdall's No. 5 H. Portwood, top of pay 1,370 feet, initial production 40 bbls.; total depth 1,400 feet. Silk's No. 1-B Portwood, dry and abandoned; total depth 1,573 feet.

Wilbarger County

Barkley & Meadow's No. 13 Waggoner, top pay 1,859 feet; initial production 75 bbls.; total depth 1,887 feet. Empire Gas & Fuel Co.'s No. 25 Waggoner, top of pay 2,261 feet; initial production 117 bbls.; total depth 2,292 feet. Fain & McGaha Oil Corp.'s No. 1 Waggoner, dry and abandoned; total depth 2,456 feet. Phillips Petroleum Co.'s No. 1 Waggoner, top pay 2,296 feet; initial production 402 bbls.; total depth 2,304 feet. Baldwin and others' No. 1 Haynes, dry and abandoned; total depth 2,509 feet. McCarty Oil Co.'s No. 2 Waggoner, top pay 1,825 feet; initial production 60 bbls.; total depth 1,835 feet. Phillips' No. 1-LL Waggoner, top pay 2,330 feet; initial production 35 bbls.; total depth 2,344 feet. Prairie Oil & Gas Co.'s No. 10-B Waggoner, top pay 2,366 feet; shot with 15 quarts; initial production 20 bbls.; total depth 2,375 feet. Shannon and others' No. 1 Hall dry and abandoned; total depth 2,702 feet. Simms Oil Co.'s No. 2 Angers, dry and abandoned; total depth 2,010 feet. Staley-Wynne & Co.'s No. 19-G Waggoner, recompleted, deepened from 2,422 feet to 2,426 feet; shot with 30 quarts from 2,404-26 feet; initial production 350 bbls. Venmex Oil Co.'s No. 1-F Waggoner, top of pay 2,426 feet; initial production 216 bbls.; total depth 2,449 feet. Waggoner Refining Co.'s No. 15 Waggoner, top pay 2,366-2,419 feet; initial production 91 bbls.; total depth 2,423 feet. Same company's No. 1-Q Waggoner, dry and abandoned; total depth 2,065 feet. Zenith Oil Co.'s No. 4 George top of pay 2,189 feet; initial production 46 bbls.; total depth 2,196 feet.

Wichita County

Arkansas Fuel & Oil Co.'s No. 36 Kemp & Kempner encountered top of pay at 1,494 feet. At a total depth of 1,508 feet the initial production was 87 bbls. of oil and 60 bbls. of water in 13 hours. Clark and others' No. 4 Brickley encountered top of pay at 843 feet, was drilled to a total depth of 849 feet and had an initial production of 90 bbls. Hammond's No. 3 Ferguson was dry and abandoned at a total depth of 1,852 feet. Hunter's No. 14-C Waggoner Brothers reached top of pay at 1,867 feet, was drilled to a total depth of 1,870 feet where the initial production was 50 bbls. Lambert and others' No. 1 Ferguson was dry and abandoned at a total depth of 1,804 feet. Perkins & Cullum's No. 2 Mangold was dry and abandoned at a total depth of 1,826 feet.

Young County

King Royalty Co. and Heydrick's No. 7 Daniel, top pay 880 feet; initial production 40 bbls.; total depth 890 feet. Kliner, Riggs & Tidwell's No. 1 Bullock, dry and abandoned; total depth 714 feet. Lyles, Kimbell & Mitchell's No. 1 Brown, dry and abandoned; total depth 768 feet. Mollenkoph's No. 3 Larimore and others, dry and abandoned; total depth 732 feet. Pierce's No. 1 Boze, temporarily abandoned. Remington's No. 1 Logan, dry and abandoned; total depth 680 feet. Reno Oil Co.'s No. 1 Meaders, dry and abandoned; total depth 1,051 feet. Riggs' No. 14 Larimore and others, top pay 707 feet; initial production 320 bbls.; total depth 717 feet. River & Omohundro's No. 1 Ruching, dry and abandoned; total depth 965 feet. Simpson and others' No. 3 Larimore and others, top pay 690 feet; initial production 300 bbls.; total depth 713 feet. Wainwright's No. 1 fee, dry and abandoned; total depth 1,001 feet. West and others' No. 1 Watson, dry and abandoned; total depth 725 feet; Westheimer & Daube's No. 3 Larimore and others, top pay 696 feet; initial production 325 bbls.; total depth 711 feet. Wooten Reed's No. 2 Brayer, dry and abandoned; total depth 670 feet. Young Brothers and Terrell's No. 2 Larimore, dry and abandoned; total depth 700 feet.

Alexander & Snoddy's No. 1 Wilborn was dry and abandoned at a total depth of 1,451 feet. Brazelton and others' No. 6 Larimore encountered top of pay at 694 feet and made an initial production of 400 bbls. from a total depth of 712 feet. Consolidated Oil Co.'s No. 1 Winkler was dry and abandoned at a total depth of 1,120 feet. Davis & Quinn's No. 1 Rochelle was dry and abandoned at a total depth of 1,027 feet. Hynes' No. 1 Deitrich was dry and abandoned at a total depth of 1,300 feet. Independent Oil & Gas Co.'s No. 5 Larimore encountered top of pay at 692 feet, was drilled to a total depth of 710 feet and had an initial production of 700 bbls. Independent Oil & Gas Co.'s No. 11 Larimore was dry and abandoned at a total depth of 735 feet. Same company's No. 14 Larimore reached top of pay at 705 feet, was drilled to a total depth of 714 feet and made an initial production of 300 bbls.

NORTH TEXAS PRODUCTION
Week Ending July 19

Panhandle district—	Bbls.
Carson County	8,865
Hutchinson County	21,110
Gray County	70,505
Moore County	390
Potter County	11
Wheeler County	845
Total this week	101,726
Total last week	102,588
Decrease	862
Wichita Falls district—	
Archer County	17,070
Baylor County	1,060
Clay County	742
Cooke County	3,350
Foard County	190
Jack County	2,450
Haskell County	60
Montague County	6,560
Throckmorton County	802
Wilbarger County	23,450
Wichita County	24,320
Young County	15,170
Total this week	95,224
Total last week	103,057
Decrease	7,833
Ranger district—	
Brown County	6,159
Callahan County	3,160
Coleman County	2,905
Comanche County	1,240
Palo Pinto County	505
Eastland County	4,455
Shackelford County	6,960
Stephens County	5,370
Total this week	30,754
Total last week	30,961
Decrease	207

WILDCAT OPERATIONS IN TEXAS PANHANDLE
Week Ending July 21

CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Danciger O. & R. Co.'s No. 1 Block, 330 ft. N and E lines, Sec. 112, Blk. 4, L&G.N. Sur.	S.D. 3,024 ft; T.P. 3,021 ft; I.P. 30 bbls. oil daily.
Empire G. & F. Co.'s No. 1 Archer-B, 330 ft. N and E, SW cor. SW, Sec. 139, Blk. 3, I.&G.N.R.R. Sur.	Location.
Gibson Oil Corp.'s No. 1 Moore, 990 ft. N, 330 ft. E, N½, SE, Sec. 20, Blk. 7, I.&G.N. Sur.	Fishing 2,884 ft.
Reiger & Steckoll's No. 1 Martin, 330 ft. N and W, SW, Sec. 90, Blk. 7, I.&G.N. Sur.	Drlg. 2,500 ft.
Shamrock O. & G. Co.'s No. 1 Thompson, 330 ft. S and W lines, E 80 ac., NE, Sec. 5, Blk. 7, I.&G.N. Sur.	17,000,000 ft. gas 2,755 ft; S.D. 3,404 ft; T.P. 3,171 ft; swbd. 16 bbls. on test.
Suloch Oil Co.'s No. 1 Bost, 990 ft. S, 330 ft. E, SW, Sec. 1, Blk. S.&F.	S.D. 3,065 ft; S.O. 3,005 ft.
Sweeney et al's No. 1 Locke, 164 ft. N and W, 40-ac. tr. along R.R. in Sec. 57, Blk. 7, I.&G.N. Sur.	S.D. 1,000 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, 1,320 ft. N, 660 ft. W, of W 480 ac., Sec. 99, Blk. 5, I.&G.N. Sur.	S.D. 2,621 ft.
Texas Interstate P. L. Co.'s No. 2 Burnett, C NE, Sec. 77, Blk. 5, I.&G.N. Sur.	Drlg. 1,025 ft.

CHILDRESS COUNTY

Continental Oil Co. and Sun Oil Co.'s No. 1 Johnson, 660 ft. NE, Sec. 580, Blk. H, W.&N.W. Sur.	Drlg. 3,775 ft.
C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Shoupe Bros.' No. 1 Aldus, 410 ft. N, 330 ft. E, Sec. 96, Blk. 16, H.&G.N.R.R. Sur.	Show oil and gas 1,678 ft; bailed estimate 10 bbls. first day from G.W. 2,194-98 ft; drlg. 3,010 ft.

(Continued on Page 112)

RANGER DISTRICT COMPLETIONS
Week ending July 19

Brown County

McCarter and others' No. 2 Favor, dry and abandoned; total depth 1,128 feet. Leiner & Walker's No. 1 Rutherford, dry and abandoned; total depth 1,200 feet.

Callahan County

Ellis & Dumas' No. 1 Tivin, dry and abandoned; total depth 1,722 feet.

Coleman County

Barney Carter's No. 2 Kingsberry, total depth 1,467 feet; plugged back 1,450 feet; shot 10 quarts 1,434-44 and

(Continued on Page 72)

Big Investment Shown In Government Report Of Pipe Line Companies

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 21.—The Interstate Commerce Commission, in a statistical statement just made public, regarding pipe line companies reporting to it, showed 37 companies, for the calendar year 1929 had aggregate investment of $741,010,196 in pipe lines and $104,445,372 in other investments and a net income of $142,216,242.

The aggregate dividends for the 37 reporting companies amounted to $125,314,087. Of the 37 listed, the largest net income of an individual company, is the Humble Pipe Line Co., $27,260,314. This company declared dividends of $25,000,000. The next largest is the Prairie Pipe Line Co., with net income of $22,182,804, declaring a stock dividend of $20,250,000.

Others listed with net income above $10,000,00 are: Magnolia Pipe Line Co., $13,584,903, declaring a dividend of $13,200,00; Shell Pipe Line Co., $14,001,625. declaring a dividend of $7,200,000.

Under the head of dividends declared, the largest individual company amounts are $25,000,00 each by the Standard Pipe Line Co., Inc., a dividend rate of 100 per cent; and the Humble Pipe Line Co., a dividend rate of 50 per cent; Prairie Pipe Line Co., $20,250,000 (stock), a dividend rate of 25 per cent; Magnolia Pipe Line Co., $13,200,000, a dividend rate of 55 per cent; and Sinclair Pipe Line Co., $10,672,072, a dividend rate of 38 per cent. The other amounts are less than $10,000,000 each.

The highest rate of dividend in the 37 listed is the Gulf Pipe Line Co., of Oklahoma, 400 per cent on a net income of $5,164,757, with $4,000,000 of dividends declared. The Empire Pipe Line Co. with net income of $1,773,465 declared a stock dividend of $1,000,000 at the rate of 200 per cent, and the Pure Oil Pipe Line Co., of Pennsylvania listed under net income of $31,085 but explained in a foot note as "deficit or other reverse item," declared a dividend of $600,000 at the rate of 200 per cent. The Standard Pipe Line Co., Inc., declared dividends listed as 100 per cent on its net income of $6,724,887 and declared dividend of $25,000,000.

The full text of the aggregate figures listed for all 37 companies follows:

Miles of line operated, 85,796; investment in pipe lines, $741,010,196; other investments, $104,445,372; cash, $8,602,090; material and supplies, $14,210,293; total current assets, $128,865,181; capital stock, $385,143,081; unmatured funded debt, $43,252,000; total current liabilities, $25,342,454; accrued depreciation, $300,364,123.

Total corporate surplus, $185,512,278; pipe line operating revenue $251,410,920; pipe line operating expenses, $102,101,243; tax accruals, $13,888,905; pipe line operating income, $135,420,772; net income, $142,216,242; dividends declared $125,314,087; oil transported, 1,156,350,772 bbls.; employes, 23,457, with aggregate compensation of $46,251,004.

SUMMER SESSION AT TIDE WATER

NEW YORK, July 21.—The Department of Fuel and Gas Engineering of the Massachusetts Institute of Technology has opened its field station for the summer session at the Tide Water Oil Co. refinery at Bayonne. The class will remain in the plant for eight weeks and will leave after Labor Day.

Frederick P. Broughton is in charge of the work at the plant, assisted by S. A. Guerierri. The work of the class consists of practice tests on various pieces of equipment in the plant, this being part of the graduate work of the school given to familiarize the students with the operations involved in the process of petroleum refining.

CARRIERS BY PIPE LINE REPORTING TO THE INTERSTATE COMMERCE COMMISSION

Selected Financial and Operating Data for the Calendar Year 1929

No.	Name of company—	Miles of line operated	Investment in pipe lines	Other investments	Cash	Material and supplies	Total current assets	Capital stock
1.	Arkana Transit Corp.	32.21	$250,153	$19,663	$14,645	.....	$28,741	$50,000
2.	Atlantic Pipe Line Co.	670.10	12,852,735	.....	18,723	$248,703	2,495,490	10,000,000
3.	Bradford Transit Co.*	815.10	1,806,216	23,599	6,923	570,018	608,456	†1,783,103
4.	Buckeye Pipe Line Co.	7,130.00	20,244,112	3,444,202	379,691	117,025	1,136,204	10,000,000
5.	Continental Pipe Line Co.	1,059.99	7,673,209	38,603	35,005	63,921	148,803	‡500,000
6.	Cumberland Pipe Line Co.	1,276.00	4,523,652	1,110,681	250,759	.....	285,808	1,500,000
7.	Empire Pipe Line Co.	843.61	8,266,051	.....	9,435	37,861	48,297	1,500,000
8.	Eureka Pipe Line Co.	4,776.13	11,175,710	2,222,614	377,830	1,117	553,039	5,000,000
9.	Gulf Pipe Line Co.	4,250.11	55,277,186	3,922,365	1,101,866	357,270	22,516,843	3,500,000
10.	Gulf Pipe Line Co. of Oklahoma	1,458.02	11,959,912	.....	8,149	105,234	1,328,810	1,000,000
11.	Humble Pipe Line Co.	6,173.29	80,767,206	.....	186,111	1,398,828	16,106,722	50,000,000
12.	Illinois Pipe Line Co.	4,928.11	40,119,820	4,082,610	326,686	1,279,863	4,055,765	20,000,000
13.	Imperial Pipe Line Co., Ltd.	296.58	2,028,646	.....	.....	12,400	375,823	680,000
14.	Indiana Pipe Line Co.	920.00	5,342,727	779,500	177,449	17,787	801,215	3,000,000
15.	Magnolia Pipe Line Co.	5,595.24	63,173,248	.....	11,425	706,800	849,554	24,000,000
16.	Maryland Pipe Line Co.	($)	161,719	173,167	6,223	.....	8,311	150,600
17.	National Transit Co.	3,911.31	8,714,316	6,402,963	203,009	.....	437,596	6,362,500
18.	New York Transit Co.	308.00	1,548,128	677,728	162,890	9,370	277,226	1,000,000
19.	Northern Pipe Line Co.	626.00	3,089,723	804,126	238,262	26,501	429,266	2,000,000
20.	Oklahoma Pipe Line Co.	2,228.63	24,376,157	.....	8,243	644,168	1,766,001	15,000,000
21.	Pierce Pipe Line Co.	216.11	2,391,501	2,183,786	.....	132,477	139,600	1,000,000
22.	Prairie Pipe Line Co.	13,197.37	103,595,571	66,651,817	1,037,795	1,865,907	7,914,763	101,250,000
23.	Pure Oil Pipe Line Co. (Ohio)	403.56	1,848,987	135,931	17,125	81,216	405,634	2,130,000
24.	Pure Oil Pipe Line Co. (Pennsylvania)	55.80	58,920	.....	.....	2,382	126,221	300,000
25.	Pure Oil Pipe Line Co. of Texas	825.35	7,166,160	126,400	73,196	215,470	3,123,686	5,000,000
26.	Shell Pipe Line Corp.	3,271.27	47,035,385	.....	16,477	377,034	17,647,660	‖6,649,978
27.	Shreveport-El Dorado P. L. Co., Inc.	210.63	2,297,947	1,798,191	66,480	22,466	1,040,464	3,482,500
28.	Sinclair Pipe Line Co.	6,877.90	85,000,940	1,062,003	3,270,016	3,330,451	8,694,957	28,084,400
29.	South West Pennsylvania Pipe Lines	1,978.82	4,415,476	1,483,915	44,784	18,144	250,673	1,750,000
30.	Southern Pipe Line Co.	520.46	3,279,942	1,172,926	185,050	18,318	264,768	1,000,000
31.	Standard Pipe Line Co., Inc.	1,902.60	29,207,664	33,155	106,168	1,592,642	18,587,100	25,000,000
32.	Texas-Empire Pipe Line Co. (Ill.)¶	421.11	5,780,533	5,530	.....	13,857	13,857	1,000,000
33.	Texas-Empire Pipe Line Co. (Okla.)**	475.00	8,544,656	5,950,719	62,610	36,260	369,498	14,220,000
34.	Texas Pipe Line Co. (of Texas)	4,789.23	52,793,010	.....	159,538	722,369	972,022	20,000,000
35.	Texas Pipe Line Co. of Oklahoma	1,399.85	7,635,644	94,177	26,885	24,946	6,943,447	6,000,000
36.	Tide Water Pipe Co., Ltd.	1,362.97	9,588,528	.....	.....	89,948	4,811,370	6,250,000
37.	Tuscarora Oil Co., Ltd.	598.94	7,018,706	45,000	12,642	50,540	3,301,490	5,000,000
	Total	85,796.40	$741,010,196	$104,445,372	$8,602,090	$14,210,293	$128,865,181	$385,143,081

*Report for period September 8 to December 31, 1929. †Represents consideration received for 14,000 shares of common stock without par value. ‡Represents consideration received for 5,000 shares of common stock without par value. §Not in operation. ¶Represents consideration received for 300,000 shares of common stock without par value. ‖Figures for operations cover the period October 1 to December 31, 1929. **Figures for operations cover the period August 14 to December 31, 1929.

No.	Name of company—	Unmatured funded debt	Total current liabilities	Accrued depreciation	Total corporate surplus	Pipe line operating revenues	Pipe line operating expenses	Tax accruals
1.	Arkana Transit Corp.	.....	$170	$236,619	$9,978	$44,772	$39,908	$5,799
2.	Atlantic Pipe Line Co.	.....	136,682	2,175,384	3,625,865	6,628,001	2,935,314	82,457
3.	Bradford Transit Co.*	.....	540,722	30,123	62,916	312,488	132,905	20,070
4.	Buckeye Pipe Line Co.	.....	439,631	11,701,888	2,880,052	4,580,346	3,327,574	315,997
5.	Continental Pipe Line Co.	.....	12,737	4,008,240	823,371	2,186,458	1,524,995	57,917
6.	Cumberland Pipe Line Co.	.....	49,955	3,375,314	1,090,209	527,380	531,761	43,146
7.	Empire Pipe Line Co.	.....	28,734	2,772,359	3,301,936	3,235,286	1,468,809	104,133
8.	Eureka Pipe Line Co.	.....	398,649	6,545,809	2,049,685	1,918,701	1,906,852	103,942
9.	Gulf Pipe Line Co.	.....	1,913,730	20,190,551	32,308,394	14,726,827	6,841,858	377,687
10.	Gulf Pipe Line Co. of Oklahoma	.....	87,491	6,588,138	5,571,492	6,812,993	1,918,150	156,527
11.	Humble Pipe Line Co.	.....	824,332	28,267,231	17,520,168	38,276,817	12,331,470	405,855
12.	Illinois Pipe Line Co.	.....	240,320	15,829,628	11,320,697	12,931,362	5,852,202	1,264,561
13.	Imperial Pipe Line Co., Ltd.	.....	67,120	939,594	731,842	588,456	336,097	57,464
14.	Indiana Pipe Line Co.	.....	528,980	2,913,068	380,734	1,652,119	788,706	189,259
15.	Magnolia Pipe Line Co.	.....	14,032,216	24,887,211	721,994	21,121,036	7,261,535	455,392
16.	Maryland Pipe Line Co.	.....	114	101,865	15,445	.....	7,817	3,818
17.	National Transit Co.	.....	168,202	6,175,122	879,653	1,693,165	1,212,674	22,957
18.	New York Transit Co.	.....	142,982	1,040,487	336,221	402,275	308,983	6,552
19.	Northern Pipe Line Co.	.....	147,916	1,965,840	191,543	361,548	274,070	24,101
20.	Oklahoma Pipe Line Co.	.....	228,359	6,350,278	3,003,611	10,577,431	3,706,754	1,003,796
21.	Pierce Pipe Line Co.	.....	6,399	2,441,881	1,752,440	589,876	190,608	25,032
22.	Prairie Pipe Line Co.	.....	515,154	39,189,483	34,608,220	38,207,121	14,849,055	3,809,450
23.	Pure Oil Pipe Line Co. (Ohio)	.....	22,348	486,565	†202,731	769,870	263,979	16,875
24.	Pure Oil Pipe Line Co. (Pennsylvania)	.....	.....	6,737	67,279	84,875	122,684	2,782
25.	Pure Oil Pipe Line Co. of Texas	.....	44,642	2,163,506	3,183,042	1,786,308	1,143,357	152,791
26.	Shell Pipe Line Corp.	$28,925,000	581,236	12,604,933	17,194,575	21,688,953	6,706,045	301,120
27.	Shreveport-El Dorado P. L. Co., Inc.	816,000	676,213	1,449,894	1,305,768	927,483	612,650	33,199
28.	Sinclair Pipe Line Co.	13,511,000	511,593	42,497,484	8,024,372	23,612,745	11,795,465	1,793,519
29.	South West Pennsylvania Pipe Lines	.....	122,917	2,647,464	421,486	879,506	729,913	56,501
30.	Southern Pipe Line Co.	.....	9,960	1,728,760	540,139	464,516	446,402	†258
31.	Standard Pipe Line Co., Inc.	.....	65,438	10,608,929	11,443,113	12,070,102	4,483,443	895,725
32.	Texas-Empire Pipe Line Co. (Ill.)‡	.....	.....	54,764	.....	265,166	174,220	11,218
33.	Texas-Empire Pipe Line Co. (Okla.)§	.....	343,415	91,310	8,324	580,095	255,678	46,266
34.	Texas Pipe Line Co. (of Texas)	.....	1,875,974	22,017,532	14,480,599	15,174,059	5,022,908	1,371,946
35.	Texas Pipe Line Co. of Oklahoma	.....	35,548	4,808,142	4,921,273	3,304,935	931,934	361,815
36.	Tide Water Pipe Co., Ltd.	.....	502,022	7,057,307	71,275	2,254,232	1,063,124	258,199
37.	Tuscarora Oil Co., Ltd.	.....	40,553	4,414,682	867,298	173,617	602,244	51,295
	Total	$43,252,000	$25,342,454	$300,364,123	$185,512,278	$251,410,920	$102,101,243	$13,888,905

*Report for period September 8 to December 31, 1929. †Deficit or other reverse item. ‡Figures for operations cover the period October 1 to December 31, 1929. §Figures for operations cover the period August 14 to December 31, 1929.

No.	Name of company—	Pipe line operating income	Net income	—Dividends declared— Amount	Rate per cent	Oil transported (bbls.)	—Employes— Number	Compensation
1.	Arkana Transit Corp.	*$935	$5,494	$20,000	40.00	358,180	5	$8,080
2.	Atlantic Pipe Line Co.	3,610,230	3,852,852	1,600,000	16.00	28,153,020	219	558,361
3.	Bradford Transit Co.†	159,513	160,916	98,000	(‡)	1,580,841	109	75,880
4.	Buckeye Pipe Line Co.	936,775	1,141,878	1,200,000	12.00	36,346,038	854	1,742,354
5.	Continental Pipe Line Co.	603,546	622,332	.....	....	25,475,444	184	371,751
6.	Cumberland Pipe Line Co.	*47,527	35,979	240,000	16.00	2,325,763	156	283,815
7.	Empire Pipe Line Co.	1,662,344	1,773,465	‖1,000,000	200.00	32,807,274	405	704,440
8.	Eureka Pipe Line Co.	*92,093	12,207	200,000	4.00	8,289,013	631	1,108,610
9.	Gulf Pipe Line Co.	7,507,282	8,031,479	.....	....	46,131,330	2,061	4,218,930
10.	Gulf Pipe Line Co. of Oklahoma	4,738,316	5,164,757	4,000,000	400.00	40,993,905	422	817,873
11.	Humble Pipe Line Co.	25,539,492	27,260,314	25,000,000	50.00	193,712,809	2,159	5,091,251
12.	Illinois Pipe Line Co.	5,814,599	6,328,133	4,000,000	20.00	69,010,855	1,183	2,391,356
13.	Imperial Pipe Line Co., Ltd.	194,895	238,243	.....	....	6,249,661	55	179,672
14.	Indiana Pipe Line Co.	674,154	801,374	1,050,000	27.00	32,589,703	330	366,016
15.	Magnolia Pipe Line Co.	13,404,109	13,584,903	13,200,000	55.00	116,803,899	1,618	2,507,755
16.	Maryland Pipe Line Co.	*11,635	*3,488	.....	....	.....	....	.....
17.	National Transit Co.	457,534	714,940	763,500	12.00	14,999,151	567	824,689
18.	New York Transit Co.	87,640	192,007	90,000	9.00	2,985,730	146	141,174
19.	Northern Pipe Line Co.	63,377	142,487	160,000	8.00	5,471,522	99	119,885
20.	Oklahoma Pipe Line Co.	5,866,881	5,897,973	6,900,000	46.00	69,659,225	661	1,523,926
21.	Pierce Pipe Line Co.	374,236	563,282	.....	....	5,568,300	46	74,059
22.	Prairie Pipe Line Co.	19,548,616	22,182,804	$20,250,000	25.00	75,093,662	3,417	8,292,521
23.	Pure Oil Pipe Line Co. (Ohio)	489,016	505,111	.....	....	8,268,538	189	288,153
24.	Pure Oil Pipe Line Co. (Pennsylvania)	*40,591	*31,085	600,000	200.00	590,697	15	18,073
25.	Pure Oil Pipe Line Co. of Texas	490,160	617,650	.....	....	11,937,367	214	443,646
26.	Shell Pipe Line Corp.	14,681,788	14,001,625	7,200,000	(¶)	96,828,782	1,928	3,552,117
27.	Shreveport-El Dorado P. L. Co., Inc.	281,634	75,084	198,669	6.00	3,808,808	248	497,230
28.	Sinclair Pipe Line Co.	10,023,761	9,400,988	10,672,072	38.00	79,204,358	2,109	4,100,624
29.	South West Pennsylvania Pipe Lines	93,092	173,965	140,000	8.00	8,932,558	219	357,445
30.	Southern Pipe Line Co.	18,372	133,623	.....	....	3,881,372	103	152,182
31.	Standard Pipe Line Co., Inc.	6,690,934	6,724,887	25,000,000	100.00	53,854,857	872	1,278,189
32.	Texas-Empire Pipe Line Co. (Ill.)¶	79,728	78,066	78,066	7.81	1,933,362	110	220,832
33.	Texas-Empire Pipe Line Co. (Okla.)**	278,151	349,604	341,280	2.40	1,933,362	200	391,552
34.	Texas Pipe Line Co. (of Texas)	8,779,205	8,742,196	.....	....	42,414,356	1,232	2,380,458
35.	Texas Pipe Line Co. of Oklahoma	2,011,186	2,002,502	.....	....	14,358,047	225	472,458
36.	Tide Water Pipe Co., Ltd.	932,909	1,100,791	1,312,500	21.00	7,787,650	243	441,449
37.	Tuscarora Oil Co., Ltd.	*479,922	*364,096	.....	....	6,211,333	283	254,198
	Total	$135,420,772	$142,216,242	$125,314,087	....	1,156,350,772	23,457	$46,251,004

*Deficit or other reverse item. †Report for period September 8 to December 31, 1929. ‡Represents dividend of $7 per share on 14,000 shares of common stock without par value. §Stock dividend. ‖Represents dividend of $24 per share on 300,000 shares of common stock without par value. ¶Figures for operations cover period Oct. 1 to Dec. 31, 1929. **Figures for operations cover period Aug. 14 to Dec. 31, 1929.

Cotton Valley Deep Sand Development

Possibility of Production in Lenticular Sands on Flanks of a Structure Should Receive Consideration in Future Prospecting

By J. S. Ross
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ABSTRACT

This paper contains a brief description of the stratigraphy, structure, and productive horizons of the Cotton Valley Field. Particular reference is made to the Trinity formations, which have been studied in connection with an engineering report in preparation by the United States Bureau of Mines.

The development of the deep horizons in the Cotton Valley Field began in 1926 with the discovery of gas in the Anhydrite zone of the Glen Rose formation. The productive sands are found below the anhydrite at total depths varying from 4,500 to 4,700 feet. They are lenticular in structure and productive only in certain parts of the field. An outstanding feature is that the two major pay lenses lie relatively low on the flanks but do not extend across the top of the structure. Although these sands have produced a good deal of gas high in gasoline content, the oil yield up to the present has been discouraging. Two wells have produced approximately 320,000 bbls. of oil of 53° A.P.I.

The Comanche series in the Cotton Valley Field is represented by formations of the Trinity group and has been penetrated to a depth of 3,700 feet. The following divisions are recognized in this paper: Upper Trinity red series, 270 feet; upper Glen Rose limestone and shale, 460 feet; Anhydrite zone, 500 feet; lower Glen Rose limestone and shale, 1,090 feet; and lower Trinity red series, 1,390 feet. The deep Trinity formations, particularly the oil and gas producing sands and contiguous beds, have been extensively cored.

The Cotton Valley Field is located in Township 21 north, Range 10 west, Webster Parish, Louisiana, approximately 12 miles west of the Homer oil field and 40 miles northeast of the city of Shreveport.

Gas was discovered in the Blossom sand in August, 1922, and oil was found in February, 1923. An intensive drilling campaign followed, and the peak production was reached in 1925. The development of the Blossom sand was confined mainly to a narrow productive oil area or ring encircling the central part of the field which contained gas. Only a small amount of the gas in the top of the reservoir was utilized. Edgewater rapidly encroached upon the sand, and, in 1928, 90 per cent of the gross fluid production was water. The Blossom sand has produced approximately 11,500,000 bbls. of low gravity (29° A.P.I.) oil.

The first producing well in the Trinity formations was drilled by the Palmer Corp. on the Davis lease, Section 23-21n-10w. It was completed in the Glen Rose anhydrite gas horizon in February, 1926. Following the discovery a number of gas wells were drilled to the anhydrite. Production was found later in the lenticular sand zone at the top of the Lower Glen Rose formation.

Development of the deeper sands was given impetus when oil was discovered during April, 1928, by the Ohio Oil Co. in No. 38 Bodcaw, Section 15-21n-10w. The initial production of this well was between 3,000 and 4,000 bbls. of oil per day from a sand 12 feet thick, encountered at a depth of 4,669 feet. The only important oil wells that have been completed in the Trinity formations were the Ohio company's No. 38 Bodcaw, and the offset well, the Ohio's No. 39 Bodcaw. These two wells produced approximately 320,000 bbls. of high gravity (53° A.P.I.) crude oil and then went to water.

The Magnolia Petroleum Co. has drilled the deepest well in the field on the McCook-Hibbler lease in Section 22. This well recently was abandoned in the Lower Trinity red series at 7,006 feet. A good show of oil was found near the bottom of the hole.

Subsurface Stratigraphy

The composite geologic section of the Cotton Valley Field, Figure 1, was compiled from portions of six different wells, namely, Palmer Corp.'s No. 1 Miller, Section 29, from surface to 2,200 feet; Cotton Valley Syndicate's No. 1 Sidney, Section 16, from 2,200 to 3,300 feet; Palmer Corp.'s No. 1 Davis, Section 23, from 3,300 to 4,000 feet, and Magnolia Petroleum Co.'s No. 3 Ira Cox, Section 23, from 4,000 to 4,300 feet; No. 1 Cole, Section 27, from 4,300 to 4,650 feet, and No. 1 McCook-Hibbler, Section 22, from 4,650 to 7,006 feet. Continuous cores were taken of the formations lying below 4,300 feet.

The Eocene Tertiary sediments are composed mainly of shale and sand. The thickness of the Eocene beds is approximately 1,550 feet. Beds of the Claiborne group outcrop at the surface.

The thickness of the Upper Cretaceous section is about 1,750 feet. The Nacatoch sand is found at an average depth of 1,650 feet but does not contain oil in the Cotton Valley Field. The only sand producing oil in the Gulf series is the Blossom, which lies 170 feet below the base of the Annona chalk.

The so-called "Woodbine" or basal sand of the Tokio formation is stratigraphically 730 below the top of the Blossom sand, and, although a maximum thickness of 40 feet has been observed, it is erratic in distribution and absent in parts of the field. The sand carries water and should not be confused with a water sand lying about 100 feet below the top of the Trinity red shale.

Approximately 3,700 feet of Comanche (Lower Cretaceous) sediments have been penetrated in the Cotton Valley Field. These sediments comprise the formations of the Trinity group, as shown in Table 1.

Upper Trinity Red Series

The beds of red clay, shale and sand that comprise the Upper Trinity red series in the Cotton Valley Field lie unconformably below the so-called "Woodbine" sand. The thickness of the red zone varies from about 270 feet on the top of the structure to at least 400 feet on the flanks. During the post-Comanche time interval prior to the deposition of the Upper Cretaceous beds, the Comanche sediments were elevated and folded, and the upper red series was subjected to erosion. The deep, brick-red color of the shale, encountered at depths ranging from 3,200 to 3,360 feet, marks the top of the Comanche series. The upper red zone contains one or more water sands.

The Glen Rose formation in the Cotton Valley Field has a total thickness of approximately 2,050 feet, and is divided lightologically into three zones, namely, Upper Glen Rose, Anhydrite zone and Lower Glen Rose.

The Upper Glen Rose is 460 feet thick and consists of alternate beds of limestone and blue shale. The top of this formation, near the center of the field, lies at a depth of approximately 3,500 feet.

The Anhydrite zone is 500 feet thick and includes all the beds of anhydrite, limestone and shale between the top of the first and the bottom of the deepest anhydrite bed. In the upper portion of the zone, the anhydrite beds are thin and interfingered with thick limestone, which makes the top of the zone difficult to recognize. The beds in the lower half of the zone, however, are massive, and owing to their distinctive character are easily recognized in drilling. The basal anhydrite bed, which is 40 feet thick, is separated by 65 feet of limestone and shale from a massive anhydrite bed above, approximately 100 feet thick. The bottom of the Anhydrite zone makes a good marker for correlating the Trinity formations.

Lower Glen Rose Formations

The Lower Glen Rose formations have been penetrated in two wells drilled near the center of the field, and in both these wells a thickness of 1,090 feet was reported. The first 490 feet of the Lower Glen Rose consists of massive beds of dark and light gray limestone, with subordinate beds of shale and lenticular sands. The deep pay sands in the Cotton Valley Field lie near the top of these limestones. A thin sand in the middle of the limestone section carries water. Calcareous and noncalcareous shale of dark blue color predominates in the lower 600 feet, and the limestone beds are thin and argillaceous.

The thickness of the beds of shale and sand of the Lower Trinity red series is probably about 2,000 feet. The entire section, however, has not been drilled in the Cotton Valley Field. The deep well drilled by the Magnolia Petroleum Co. on the McCook-Hibbler lease, Section 22-21n-10w, was abandoned at a total depth of 7,006 feet after drilling into the "red beds" 1,390 feet. The base of the red zone, however, was penetrated in the Pine Island and Bellevue Fields. In the former field, according to A. F. Crider, the deep test well of the Dixie Oil Co., No. 92 Dillon, encountered 2,030 feet of red sediments. In the Bellevue Field the Lower Trinity red series was 1,900 feet thick. The beds of the red zone are presumably of nonmarine origin.

One well drilled near the top of the structure in the Cotton Valley Field entered the lower red beds at a depth of 5,545 feet, which is 1,650 feet deeper than the top of the same series in the Pine Island Field. The top beds in the Cotton Valley Field consist of red and purplish shales and pink and red sands. Deeper in the series the sands are more abundant and lighter in color. Near the bottom of the Magnolia's McCook-Hibbler well the predominant formation consisted of white and gray sands. A sand in this well, approximately 1,250 feet below the top of the zone, was found to contain water, and sand cores below 1,300 feet were stained with oil.

Little Known About Marine Section

Comparatively little information is available regarding the Lower Trinity marine section which underlies the red series. Dixie's No. 92 Dillon, in the Pine Island Field, drilled out of the lower red beds at a depth of 5,925 feet and penetrated 426 feet of dark, hard limestone, shale and sand. The log of the formations in the lower part of this well is shown in Table 2. A show of gas and oil, but not in commercial quantities, was reported in sand from 6,119 to 6,125 feet, or 194 feet below the top of the Lower Trinity marine formations. From 6,125 feet to the bottom of the hole the formations consisted of alternate beds of hard, calcareous sandstone and limestone, with subordinate beds of hard shale.

The Cotton Valley Field is an anticlinal fold with an axial trend in a

TABLE 1—TRINITY SECTION IN THE COTTON VALLEY FIELD, WEBSTER PARISH, LOUISIANA

Formation—	Description	Thickness (feet)
Upper Trinity red series	Red clay, shale and sand	270-400
Upper Glen Rose	Limestone and blue shale	460
Anhydrite zone	Anhydrite, limestone and shale	500
Lower Glen Rose	Limestone and blue shale	1,090
Lower Trinity red series	Red and purplish shale and pink, red and white sand	+1,390

TABLE 2—LOWER TRINITY MARINE FORMATIONS IN THE PINE ISLAND FIELD, CADDO PARISH, LOUISIANA

Dixie Oil Co.'s No. 92 Dillon, Section 13-21n-15w:

5,925	Base of Lower Trinity red zone.
5,925-5,941	Gray sandy limestone.
5,941-5,962	Dark gray sandy shale.
5,962-5,970	Gray sandstone.
5,970-5,995	Dark slaty shale.
5,995-6,014	Dark sandy limestone.
6,014-6,019	Light limestone.
6,019-6,025	Dark slaty shale.
6,025-6,034	Dark sandy limestone, fossiliferous and pyritic.
6,034-6,050	Dark sandy shale, laminated.
6,050-6,055	Dark sandy limestone, fossiliferous.
6,055-6,070	Dark shale.
6,070-6,075	Dark sandy shale.
6,075-6,110	Black shale.
6,110-6,112	Dark sandy limestone and shale, fossiliferous.
6,112-6,119	Dark limestone.
6,119-6,125	Sand, show of gas (192,000 feet) and oil.
6,125-6,138	Sandy and shaly limestone.
6,138-6,157	Limestone, fossiliferous.
6,157-6,186	Interbedded hard limestone and sand.
6,186-6,297	Hard limestone and shale.
6,297-6,306	Hard sandy limestone.
6,306-6,316	Hard sand.
6,316-6,320	Sandy shale.
6,320-6,323	Hard sand.
6,323-6,327	Hard shale and sand.
6,323-6,351	Hard sandy limestone and sand.

TABLE 3—REPRESENTATIVE SECTION OF THE BASAL ANHYDRITE BED AND THE DAVIS OIL AND GAS HORIZON, COTTON VALLEY FIELD, LOUISIANA

Magnolia Petroleum Co.'s No. 1 J. M. Mixon, Section 22-21n-10w, Webster Parish:

Basal Bed of the Anhydrite Zone

4,490-4,518	Anhydrite.
4,518-4,532	Anhydrite calcareous shale, and argillaceous limestone.

Lower Glen Rose

4,532-4,568	Gray limestone and calcareous shale.

Davis Oil and Gas Horizon

4,568-4,576	Pale green and gray, fine-grained sandstone and calcareous and argillaceous sandstone.
4,576-4,589	Reddish brown and green noncalcareous shale.
4,589-4,595	Pale green, fine-grained and rusty, coarse-grained sandstone.
4,595-4,601	Hard blue shale.
4,601-4,609	Gray limestone, fossiliferous.
4,609-4,616	Dark gray, fine-grained sandstone, carbonaceous.
4,616-4,619	Shale.
4,619-4,629	Gray limestone, fossiliferous and calcareous shale.
4,629-4,652	Brown and light gray, fine and coarse-grained sandstone, and calcareous sandstone.
4,652-4,658	Gray, calcareous sandstone and limestone.

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northeast-southwest direction. The apex of the structure is in Section 23-21n-10w. The Trinity formations were elevated and folded at the end of Comanche time and again, but to a lesser degree, during the period of deformation of the Upper Cretaceous and Eocene Tertiary beds. Since the older beds dip much more steeply than the younger, the Trinity structure has the appearance of being elongated rather than dome-shaped, as is exemplified in the Upper Cretaceous.

The structure of the Upper Cretaceous beds is represented in Figure 2 by contours drawn on the top of the Blossom sand, while the structure of the Trinity formations is shown in Figure 3 by contours drawn on the base of the Anhydrite zone. The Blossom sand structure, within the proved area of the field, has a closure of 80 feet as compared with a closure of about 220 feet for the same area in the Trinity formation.

The structural cross sections in Figures 2 and 3 were drawn on the same exaggerated scales and the sections show the relative dips of the Blossom sand and the Anhydrite and underlying contingent beds. The unconformity between the Comanche and Upper Cretaceous beds may be observed in Figure 4, which is a cross section through the center of the field perpendicular to the structural axis.

Producing Horizons

This paper deals primarily with the producing zones below the Blossom horizon, although the Blossom is the main producing oil sand in the field. The average thickness of the "pay" sand is 30 feet, and the depths of the wells vary from 2,500 to 2,600 feet. The Blossom sand reservoir originally contained gas, oil and water, arranged in the order of their specific gravities and distributed over the field in the manner shown in Figure 2. The arrangement of fluids and gases in the dome-shaped Blossom sand reservoir is an ideal textbook example of segregation in an oil field structure.

The gas horizon in the Anhydrite zone lies approximately 100 feet above the base of the zone. The gas apparently comes from porous or fractured beds of limestone and anhydrite. Cores in this formation show finely divided pyrite but no sand.

The sands which produce oil and gas in the top of the Lower Glen Rose formation lie in a zone approximately 85 feet thick, and from 35 to 40 feet below the base of the Anhydrite zone. This zone is designated locally as the Davis horizon, after the name of the lease on which the first well to penetrate these sands was drilled. Three minor sand zones separated by thin limestone have been recognized in wells where this horizon has been cored carefully. A representative section of the Davis horizon is given in Table 3.

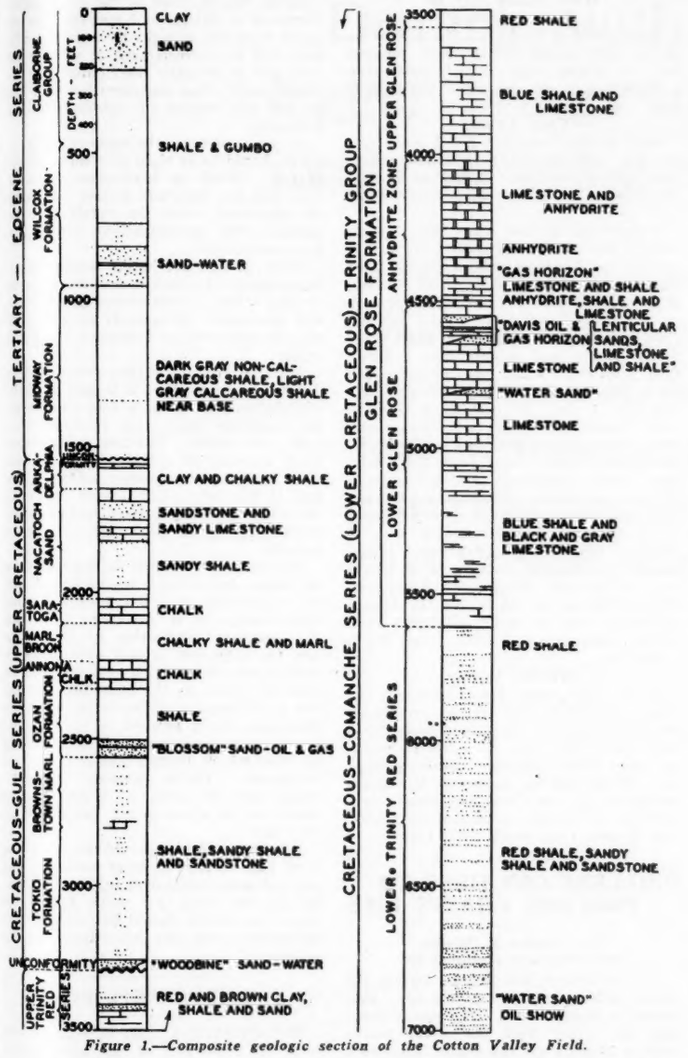


Figure 1.—Composite geologic section of the Cotton Valley Field.

zones separated by thin limestone have been recognized in wells where this horizon has been cored carefully. A representative section of the Davis horizon is given in Table 3.

Davis Sands Lenticular and Thin

The sands in the Davis horizon are lenticular in structure and relatively thin. They vary widely in porosity and are erratically distributed throughout the field. Their depths range from 4,500 to 4,700 feet. Two lenses only are of major importance. One of these, the Tillman sand lense, lies at the top of the horizon; the other, the Bodcaw sand lens, lies near the base of the horizon. The names of the two sand lenses were taken from the leases upon which the first producing wells were drilled.

The Tillman sand lens produces principally gas, with a small amount of oil, and as developed to date (February, 1930) extends over portions of Sections 21 and 28 in the southwest part of the field. This sand lens varies in thickness from a few feet to about 20 feet. Its areal distribution is shown on the structure map in Figure 3.

The Bodcaw sand lens as outlined by drilled wells is a narrow, lenticular sand from one-quarter to one-half mile wide, extending northeast-southwest across the northwest side of the field. The thickness of this sand lens varies from a few feet to approximately 25 feet. The interval between the top of the Bodcaw sand and the base of the Anhydrite zone is approximately 100 feet. The interpreted positions of the gas, oil and water and the areal distribution of the sand are outlined on the map in Figure 3.

Failure Does Not Condemn All

Most of the wells that have penetrated the Davis horizon were drilled on the crest and on the north and west sides of the structure. The failure of the wells on the top of the structure to encounter large sand bodies comparable with the Tillman and Bodcaw sand lenses does not condemn the areas lying on the south and southeast sides of the structure, in which no deep wells have been drilled. There is a possibility, however, that these areas may contain, low on the structure, productive sand lenses of the type just mentioned. Thin sands were encountered near the apex which produced large initial flows of gas.

The deepest "pay" sands developed in the Cotton Valley Field are approximately 4,600 feet deep. The formations below these sands have been penetrated 2,400 feet and, although shows of gas and oil were encountered at several

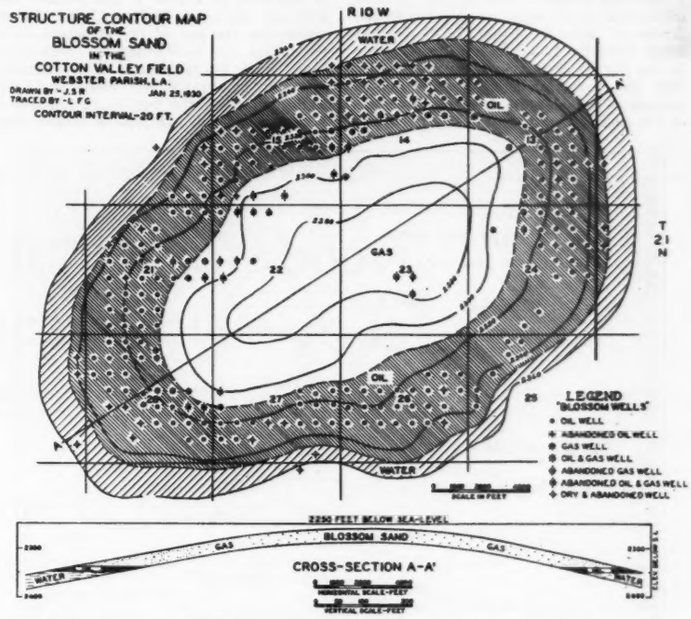


Figure 2.—Blossom sand structure, showing the distribution of gas, oil and water.

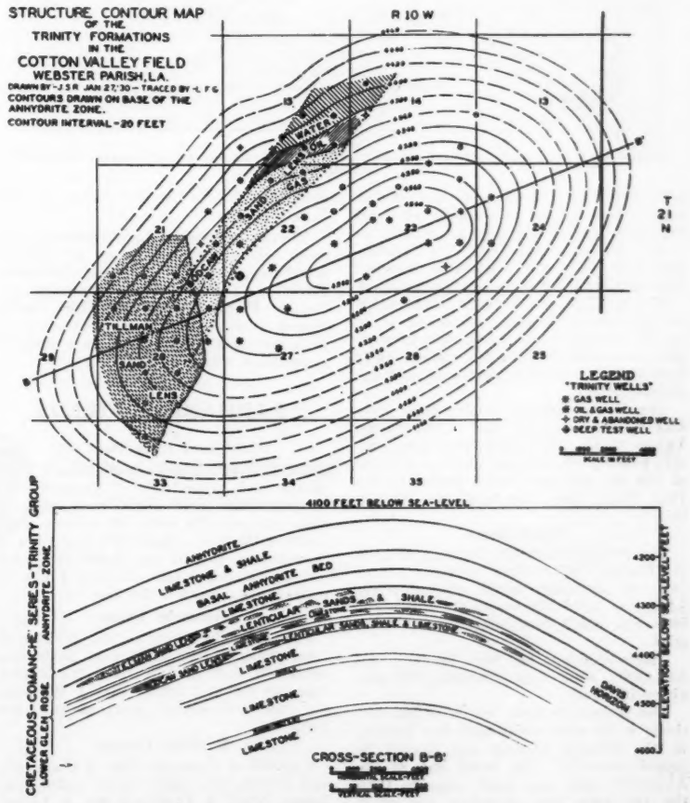


Figure 3.—Trinity structure, with contours drawn on the base of the anhydrite zone, showing distribution of gas, oil and water in the two major sand lenses.

horizons, none of the sands proved to be productive; hence, the possibilities of deeper production apparently are limited to the older beds of the red series and the marine formations of the Lower Trinity. These beds lie below the approximate depth of 7,000 feet.

In the deep test well, Magnolia's No. 1 McCook-Hibbler, Section 22, several oil-stained sands were cored between the depths of about 6,900 and 7,000 feet. At 6,945 feet, or 1,330 feet below the top of the Lower Trinity red section, a 13-foot core was taken of a sand which contained considerable free oil. A string of 5¾-inch casing was cemented at 6,947 feet, but when the casing was bailed, water from behind the casing or from the sand entered the hole as rapidly as it was bailed, and prevented a satisfactory test. The well then was deepened from 6,958 to 7,006 feet and abandoned.

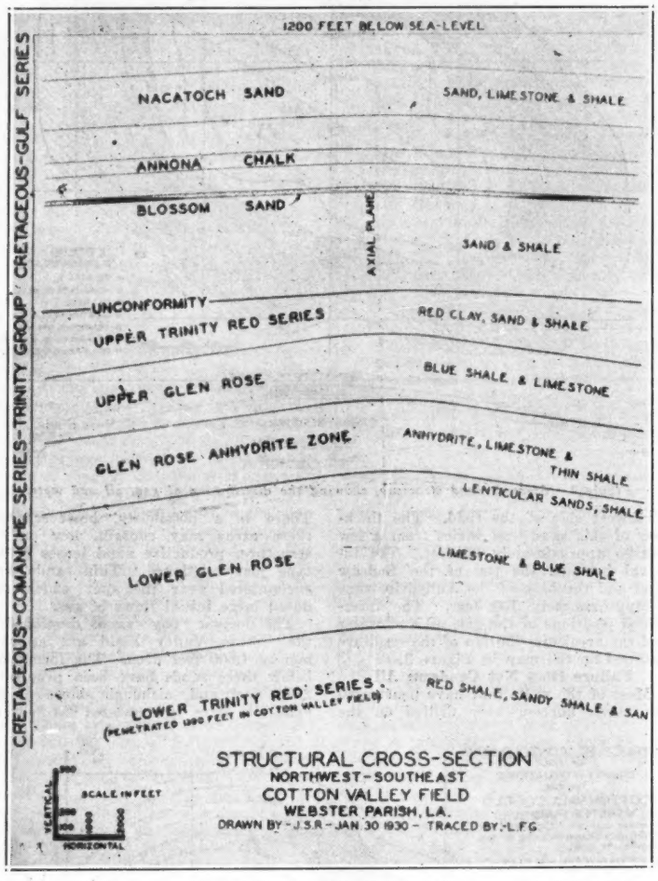


Figure 4.—Cross-section showing unconformity between Comanche and upper Cretaceous formations.

The presence of oil stains in the sands of the Lower Trinity red series is of special significance because this presumably nonmarine section has not generally been considered favorable for oil and gas accumulations.

The Lower Trinity marine beds probably underlie the red zone in the Cotton Valley Field. This formation may contain possible oil and gas sands on account of the oil and gas shows found in the Pine Island deep test well, No. 92 Dillon.

Conclusions

The production in the Trinity group in the Cotton Valley Field is found principally in lenticular sands approximately 1,250 feet below the top of the Comanche beds and 2,000 feet below the Blossom sand.

Commercial gas has been found in the Anhydrite zone approximately 100 feet above its base.

The Anhydrite zone, which is 500 feet thick, is the most dependable key horizon in the Trinity section and should be logged carefully. The basal beds of the Anhydrite zone are more massive than the top beds and therefore are more easily recognized. If the base of the zone is accurately established by coring, detailed correlation of the several lenticular sands lying below is simplified.

The lenticular sands which comprise the Davis horizon vary widely in porosity. The porosity of the sand is very important and apparently the production of a well depends to a large extent upon this characteristic. It will be observed in Figure 3 that neither the Tillman nor the Bodcaw sand lenses transverse the top of the structure. The possibility of production in lenticular sands lying on the flanks of a structure and not penetrated or "discovered" by wells drilled on the top, is an important feature which should receive proper consideration in future prospecting on the Trinity "highs."

The writer desires to acknowledge the help and assistance given by various members of the Shreveport Geological Society, especially W. C. Spooner and Dr. A. F. Crider. H. B. Hill, United States Bureau of Mines, Dallas, Tex., reviewed this paper and gave helpful suggestions and criticisms.

PANHANDLE FIELDS

(Continued from Page 68)

1,447-51 feet; initial production 3 bbls. Smith and others' No. 3 Switzer, top of pay 1,428 feet; initial production 97 bbls. oil and 12 bbls. of water; total depth 1,435 feet. Tidal Oil Co.'s No. 6 Stewardson, top of pay 1,445 feet; initial production 2 bbls. oil and 1 bbl. of water; total depth 1,454 feet.

Comanche County

Cronette Oil Corp.'s No. 3 Poteet, total depth 2,783 feet; initial production 1,024,000 feet of gas from 2,723 feet. Sun Oil Co. and others' No. 1 Wilhelm, dry and abandoned; total depth 3,300 feet.

Eastland County

Cranfill & Reynolds' No. 1 Coop, dry and abandoned; total depth 1,390 feet. Lucas, Tsett & Painter's No. 1 Vestal, dry and abandoned; total depth 3,110 feet. Michel and others' No. 1 Hughes, dry and abandoned; total depth 1,353 feet.

Shackelford County

Big States Oil Co.'s No. 17 Russ-Webb, gas sand 1,010-20 feet and 1,047-51 feet; initial production 5,000,000 feet of gas; total depth 1,051 feet. F. W. Holder's No. 1 Compton Brothers, dry and abandoned; total depth 904 feet. Wilson Drilling Co.'s No. 1 Morris & Buie, dry and abandoned; total depth 1,600 feet.

Stephens County

G. Cooze's No. 1 Douglass & Brown, top of pay 3,202-15 feet; plugged back 3,215 feet; initial production 35 bbls.; total depth 3,225 feet.

Taylor County

Condor Petroleum Co.'s No. 1 Stokes, dry and abandoned; total depth 3,658 feet.

COMPLETIONS IN PANHANDLE
Week ending July 19

Carson County

Empire Gas & Fuel Co.'s No. 1 Whittemore, total depth 3,434 feet; plugged back to 3,136 feet; initial production 1,000,000 feet of gas from 2,940-3,000 feet.

Gray County

Gulf Production Co.'s No. 5 Saunders, top pay 2,925-65 feet; shot 380 quarts from 2,900-3,020 feet; initial production 595 bbls. in 18 hours; total depth 3,020 feet.

Vulcan Oil & Gas Co.'s No. 1 Carpenter, top of pay 2,742-80 feet; initial production 5 bbls. with 3,500,000 feet of gas; total depth 2,810 feet. Champlin & Danciger's No. 7 Cook-Faulkner, top of pay 2,793-2,940 feet; initial production 100 bbls.; total depth 2,941 feet. J. H. Lenix and others' No. 1 Bradford, total depth 3,252 feet; plugged back to 2,545 feet; initial production 6,500,000 feet of gas. Prairie Oil & Gas Co. and others' No. 5 Worley and others, top of pay 2,783-2,895 feet; initial production 250 bbls.; total depth 2,915 feet. The Texas Company's No. 9 Combs & Worley, top of pay 2,860-2,915 feet; initial production 250 bbls.; total depth 2,930 feet. Same company's No. 6 Wright, top of pay 2,785 feet; initial production 50 bbls. per hour with 2,500,000 feet of gas; total depth 2,890 feet. Wilcox-Pampa Oil Co.'s No. 17 Combs & Worley, top of pay 2,743-2,800 feet; initial production 135 bbls.; total depth 2,830 feet.

Wheeler County

H. R. Anderson's No. 1 Reneau, gas sand 1,862-1,943 feet; initial production 30,000,000 feet of gas; total depth 1,943 feet. Lone Star Gas Co.'s No. 1 Cooper, gas sand 1,452-1,613 feet; initial production 10,000,000 feet of gas. Murchison & Fain's No. 18 Close, gas sand 1,463-1,575 feet; initial production 37,000,000 feet of gas; total depth 1,675 feet.

DRILLERS CAN HELP TO PROLONG CHAIN'S LIFE

By Charles R. Weiss
Chief Engineer Link-Belt Co.

As the drilling has become deeper, the entire drilling mechanism has been subjected to greater loads. The power input into the rotary from the power source reflects directly on the chain. The chain manufacturers have attempted to keep pace with the more severe conditions imposed, and stronger and finer chains have been the result. The drilling operators can assist materially in prolonging chain life, and in reducing shutdowns resulting from chain failures if the following points are considered: Care of the chain by the user is divided into two factors, manner in which the chain is applied, and the care given the mechanism during operation.

The first principle of chain installation is the assurance that the sprocket wheels are in line on the shafts and that the shafts themselves are parallel and level with regard to each other. The application of drive chains where the sprockets are not exactly in line on the shafts will tend toward a side pull, concentrating the load on the sides of the sprocket teeth, and concentrating the load on one side of the chain, resulting in an excessive wear of both chain and sprockets and a false consumption of power.

Great care is taken by the chain manufacturers to design and manufacture the chain with the thought that the installation will be correctly made, so that the load will be properly distributed over the chain parts. The concentration of a load on one side results in abnormal bearing pressure.

In like measure, the supporting structures should be as rigid as conditions will permit. Weak or inadequate construction will not maintain proper conditions of alignment, with the result that the uneven load concentrations referred to are encountered.

Chain should not be operated with too much slack. If slack is present whipping results, which is destructive to the chain and sprockets. Frequently enough chain can be removed to overcome this difficulty.

With regard to the care afforded chain during operation, that is largely a matter of lubrication. It is a fact that where steel engages with steel, friction occurs and wear results. The heavy, high-speed loads imposed on rotary chains are carried to many component metals parts, and if the lubrication is not sufficient, there is a tendency toward galling, which results in rapid wear and consequent stretch.

Rotary chains should be kept clean at all times, and should be lubricated with oil comparable to a heavy engine grade. Particularly is it necessary to insure the complete lubrication of the joints, and the lubricant is best applied to the side of the chain which engages with the sprocket teeth, as the centrifugal action, due to the motion of the chain, will carry lubricant thusly applied to the engaging metal parts, thus providing the necessary oil film which reduces the friction to a minimum. Tacky, gummy lubricants should not be used, as these will not penetrate the chain joints, hence will not lubricate.

Sprocket wheels should be looked at from time to time to make sure that they are not worn enough to injure the chain. Before the teeth are worn to a hook shape the wheels should be replaced with accurately made and close-fitting sprocket wheels.

R. L. BENNETT DIES

HOUSTON, Tex., July 21.—R. L. Bennett, 59 years old, of the land department of the Humble Oil & Refining Co., died at a Houston hospital. Mr. Bennett had been with the Humble land department 11 years.

SUMMARY OF STATEMENTS MADE JULY 10, 1930, RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING JUNE 30, 1930

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	958,556.79	401,832.59	666,791.86	514,958.60	512,611.28
S. W. Pa. P. L.	473,726.84	87,617.14	629,492.79	293,475.85	484,614.48
Eureka P. L.	1,513,002.87	358,790.11	453,515.19	287,924.63	338,802.90
Buckeye P. L. (Macksburg)	703,931.58	364,632.13	30,090.85	191,217.71	278,683.03
Buckeye P. L. (Lima, etc.)	5,431,450.43	104,524.39	2,127,372.74	1,321,483.64	756,085.56
Buckeye P. L. (Cleveland)	55,515.82	11,532.20	139,115.27	2,197.39	151,106.89
Indiana P. L.	795,353.46	4,668.50	2,849,226.20	1,380,005.73	1,468,166.60
Cumberland P. L.	642,482.12	180,908.73	1,386.26	202,494.92	.....
Southern P. L.	311,844.58	.....	145,346.57	69,870.56	123,317.85
Bradford Trans.	323,566.32	434,192.37	.....	532,989.04	.....
N. Y. Transit	189,973.76	36,257.24	170,495.42	200,874.00	38,648.91
Northern P. L.	398,070.99	.....	488,171.99	212,164.55	235,110.09
Tidewater Pipe	997,249.93	27,940.66	.....	535,527.04	.....
Tuscarora Dev.	277,158.49	.....	.....	506,409.06	.....
Total June 30	13,071,882.98	2,012,896.06	7,701,004.14	6,241,592.72	4,387,147.59
Total May 31	12,797,120.58	2,222,371.87	7,633,478.09	6,703,837.92	4,442,159.42
Difference	274,762.40	209,475.81	67,526.05	462,245.20	55,011.83

Dealing with a patent bootlegger brings uncertainty—it is likely to bring serious trouble

A so-called guarantee of immunity which merely protects you against the expense of defending any suits for infringement is like an accident insurance policy which merely pays for your ride in the ambulance

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Natural Gas Developments

LEASE ON UTE LANDS OFFERED AT AUCTION

DENVER, Colo., July 19.—Southern Union Gas Co. of Dallas has acquired from the Hope Engineering Co. assets of Mesa Grande Gas Co., a transporting unit which pipes natural gas from the Ute Dome in northwestern New Mexico to Durango, Colo., and the Durango National Gas Co., which distributed gas to domestic consumers in Durango and vicinity. The transaction gives Southern Union Co. additional gas reserves for the pipe line system it is now constructing from northwestern New Mexico to Albuquerque, Santa Fe and other cities and towns in central New Mexico.

The Ute Dome gas comes from wells drilled by Midwest Refining Co. and Producers & Refiners Corp. Southern Union also supplies natural gas to the town of Farmington and is drilling for gas in the Kutz Canon area in San Juan County. In order to facilitate building up of gas reserves for the new system under construction, the Department of Interior has lifted drilling restrictions on government land in that area.

The Office of Indian Affairs has just announced a public auction sale of gas lease on Ute Indian lands, August 2. The lease will be made for a period of 10 years and as long as gas is produced in paying quantities. Royalties at the rate of 12½ per cent of the value of the gas in the field are to be paid when the average daily production for the calendar month is less than 3,000,000 feet, and 16⅔ per cent when such average daily production is 3,000,000 feet or more. Gas producing privileges may be retained by the lessee in the event a gas producing well can not be profitably utilized at the above rates, by the payment of $100 per annum in advance for each such well calculated from the date of discovery, the gas from which is not marketed or utilized other than for operating purposes. The lessee will be required to pay annually advance royalties of 15 cents per acre for the first and second years from the date of the approval of the lease; 30 cents per acre in advance for the third and fourth years; and 75 cents per acre per annum in advance for the fifth year and $1 per acre each succeeding year thereafter during the term of the lease.

The successful bidder for the lease must pay 25 per cent of the bonus offered on the day of the sale. The balance of the bonus offered must be paid before delivery of the approved lease. The entire bonus may, however, be paid on the day of sale. In addition to the initial bonus, the successful bidder will be required to pay on the day of the sale the advance royalty of 15 cents per acre for the first year.

GAS FOR ALPINE

ALPINE, Tex., July 19.—Alpine is assured of natural gas next fall under a contract entered into by the city commission and A. T. Woods, who represents eastern capitalists. Final details were completed this week and a bond of $5,000 was posted. The gas is to be brought from Pecos County Field at a point not for north of the Brewster County line.

SMITHVILLE GAS FRANCHISE

SMITHVILLE, Tex., July 19.—C. W. Arlit of Austin, who was given 45 days in which to accept or reject the gas franchise tendered by the city council here, has notified Mayor J. C. Mills that he has accepted the franchise. He must have the plant in operation by January 2, 1931.

A.G.A. NOMINATIONS

The nominating committee of the American Gas Association will present the following names for election at the annual meeting of that organization at Atlantic City, N. J., October 13 to 17.

For president, Clifford E. Paige, vice president of the Brooklyn Gas Co. For vice president, R. W. Gallagher, president of the East Ohio Gas Co. For treasurer, W. J. Welsh, president of the New York & Richmond Gas Co. Directors, two-year terms, Walter C. Beckford, vice president of the Boston Consolidated Gas Co.; J. D. Creveling, associate manager of the natural gas and gasoline division of Henry L. Doherty & Co.; Raymond Cross, president of the Ohio Fuel Gas Co.; Henry L. Doherty, president of Cities Service Co.; Oscar H. Fogg, vice president of the Consolidated Gas Co.; Samuel Insull, Jr., president of Midland United Co.; F. A. Lemke, secretary and treasurer of the Humphrey Co.; A. E. Peirce, president of the Central Public Service Corp., and Arthur Stockerstrom, secretary of the American Stove Co.

PENN-TIOGA GAS CO.

HARRISBURG, Pa., July 21.—The Penn-Tioga Gas Co. has applied to the Public Service Commission for approval of its incorporation for the purpose of extending the charter territory of the North Penn Gas Co. in Tioga County.

The Penn-Tioga Gas Co. desires to furnish gas for light, heat and fuel purposes in the townships of Chatham, Middlebury, Delmar, Tioga and Mansfield, all in Tioga County.

If the approval of the commission is given to this application the Penn-Tioga company will sell its rights and franchises to the North Penn Gas Co., which now supplies gas to Tioga borough but to no other portion of Tioga County.

The new company has a capital stock of $5,000 and the incorporators are James H. Isserwood, John L. Wood and George W. Keith, all of Port Allegany.

GAS FOR HARDIN, MONT.

CASPER, Wyo., July 19.—Hardin, Mont., in northern Big Horn County, is expecting to have a natural gas supply for the city by next fall that will be ample for domestic uses during the cold weather. The Big Horn Oil & Gas Co. has a number of shallow wells just outside the town and last winter these wells supplied a large part of the city with gas. Three more wells have been drilled and the company is expecting to drill three more so that six new wells will be ready by fall. The wells range from 600 to 800 feet in depth.

GAS LINE TO CUT BANK

CASPER, Wyo., July 19.—Gas was turned into the new gas line from the Drumheiler well north of Cut Bank, Mont., to that town and several buildings in Cut Bank are now using natural gas instead of coal. The Producers & Refiners Corp. has let contracts for three wells in the area north of Cut Bank and these wells, together with other wildcats now drilling, are expected to develop the gas area found in the Drumheller well.

GAS EXPORT CRITICIZED

CHATHAM, Ontario, July 19.—The city council of Medicine Hat, Alberta, has submitted to the convention of the Union of Alberta municipalities a resolution opposing export of natural gas from Alberta and urging that the Alberta provincial government find means of utilizing surplus gas.

SALES OF NATURAL GAS TO CALIFORNIA UTILITIES

Sales of natural gas to California utilities reached the highest point in January, 14,008,610,000 feet, a segregation of the volume of total California production discloses. This segregation covers the period from July, 1928, through May, 1930, and was compiled by Claude C. Brown, gas administrator of the California Railroad Commission.

Since January, sales to utilities have declined to 10,856,754,000 feet in February, 11,605,482,000 feet in March, 10,294,538,000 feet in April, and 10,650,367,000 feet in May, due, in large part, to seasonal fluctuation. However, increases over the like months of 1929 were shown during this period, ranging from 685,282,000 feet in February, 830,111,000 feet in March, and 822,541,000 feet in April to 1,939,266,000 feet in May.

This is an indication of the upward trend in sales from Districts Nos. 4 and 5, which comprise the Kettleman, Midway and Coalinga Fields. Sales remained fairly constant during the first five months compared with last, in Districts Nos. 2 and 3, comprising the Ventura and Santa Maria territory; and District No. 1, including fields in the Los Angeles Basin, showed considerable declines in February, March, April and May, with but a slight gain in January.

The largest gain in Districts 4 and 5 was registered in May when 3,017,504,000 feet were sold to utilities, an increase of 2,322,797,000 feet over May, 1929. Sales amounted to 3,443,778,000 feet in January, the largest total yet shown from the two districts, an increase of 2,311,978,000 feet over the like month in 1929, while in February, March and April the range was between 2,500,000,000 and 3,000,000,000 feet with gains of more than 1,500,000,000 feet monthly.

These increases are for the most part attributable to the operations of recently completed natural gas transmission lines. While the entire northern section of the State, with the exception of the North Bay area, will be served with natural gas by the end of this month, officials of utilities serving this section believe the full effect of sales of surplus gas to industrial consumers will not be reflected in materially increased usage until 1931, due to the time element involved in changing present plant equipment to that suitable for natural gas consumption from fuels now in use.

Allowing for seasonal fluctuations, sales to utilities in the Los Angeles Basin have not varied widely during the 23-month period considered, ranging from approximately 4,200,000,000 feet to 6,900,000,000 feet monthly. This is also true of Districts Nos. 2 and 3, where utility sales have fluctuated between 2,040,000,000 feet and 3,778,000,000 feet a month.

The largest proportion of the State total is derived from the fields in the Los Angeles Basin. Production there has ranged from 17,890,622,000 feet in July, 1928, to 21,825,032,000 feet in December of that year, continuing a steady upward trend to October, 1929, the highest point, which totaled 39,728,167,000 feet. This area was the principal factor in producing the highest total of statewide production yet recorded, 59,253,936,000 feet.

Wheil production in this territory during the two following months fell to approximately 28,000,000,000 feet, November, 1928, marked the first month of production in Districts Nos. 4 and 5 in excess of 10,000,000,000 feet which was continued in December, and increased to nearly 14,000,000,000 feet in January, 1930. While there was a slight decline in February under that of the preceding month, production in March and April showed substantial gains. In May, production totaled 17,501,881,000 feet, approximately six times that of the total production of the area in July, 1928, which was 2,742,159,000 feet.

In Districts 2 and 3, production has varied from slightly more than 6,000,000,000 feet monthly to 9,339,967,000 feet, the highest point, which was reached in August, 1929. There were slight decreases from this level in the following three months, and for the period between December, 1929, and May, 1930, prdouction fluctuated between 6,500,000,000 and 7,400,000,000 feet.

The peak production month of each district also has registered practically the largest wastage. Thus, in October, 1929, at District 1, with production at 39,728,167,000 feet, waste amounted to 20,638,354,000 feet; in August, 1929, with production at 9,339,967,000 feet; in Districts 2 and 3, waste was 5,255,793,000 feet; and at Districts 4 and 5, in May, 1930, out of a total production of 17,501,881,000 feet, waste totaled 12,039,404,000 feet.

In April and May of this year, wastage in the Kettleman district amounted to 10,642,940,000 feet and 12,039,404,000 feet a month, respectively. Due to decreased production from former levels, wastage in District No. 1 averaged around 7,000,000,000 feet a month, and in 2 and 3, approximately 2,000,000,000 feet.

GAS STORAGE PROJECT

CHATHAM, Ontario, July 19.—C. J. Yorath, president and managing director of the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary, states that the recharging of the Bow Island sands with surplus gas from the Turner Valley Field is proceeding and should be completed by the end of July. Compressors are forcing the gas into the sands under 750 pounds pressure. Before starting the experiment, old wells were repaired and refitted and field lines renewed where necessary, this work having been in progress since April. When recharged, the field will serve as an emergency reservoir for the entire system operated by the Canadian Western company.

TRANSFER IS AUTHORIZED

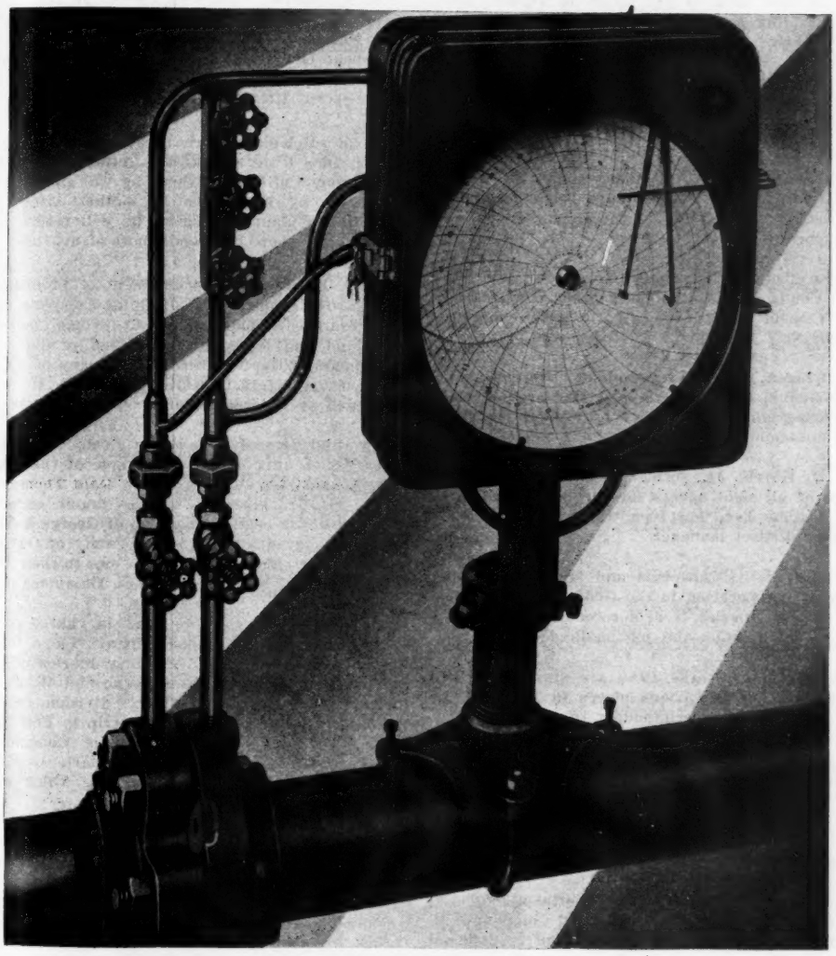
CHATHAM, Ontario, July 19.—Alberta Public Utilities Commission at Edmonton has formally authorized the transfer of the Alberta subsidiaries of International Utilities Corp. to Dominion Gas & Electric Corp. The transfer includes the Canadian Western Natural Gas, Light, Heat & Power Co., supplying natural gas to Calgary and other communities from the Foremost, Bow Island and Turner Valley Fields, and Northwestern Utilities, Ltd., supplying Edmonton and intermediate points from the Viking Field; as well as Gas Production & Transportation, Ltd., a development subsidiary of the Canadian Western Co. Assurance was given that the transfer would not affect the gas tariffs and rate base of the companies concerned.

GAS LINE TO WELLINGTON

WELLINGTON, Kans., July 19.—Surveying for the laying of a new 20-inch pipe line, to connect the line at Wichita from the Dilworth, Okla., station, has been started in Sumner County by the Cities Service Gas Co. The new line will replace the old 12-inch pipe line and will increase the supply to this city. Although the added pressure was not needed here, it was found necessary to increase the size of the pipe in order that the excess supply of gas from the Oklahoma City Field might be utilized.

DIFFERENT

The EMCO ORIFICE METER



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With this data, augmented by expert engineering design, we give to the gas industry the EMCO Orifice Meter - - the meter the industry asked for. The EMCO Orifice Meter will measure accurately on all differentials, being built for ranges of 5, 10, 20, 50 or 100 inches of water.

A catalog fully describing this meter is ready. We shall send it to you promptly at your request.

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EMCO METERS AND REGULATORS

MEN KNOWN IN OILDOM

Dr. John A. Allan

Dr. John A. Allan, well known to the oil industry in the Canadian West, was born in Aubrey, Quebec, in July, 1884. Brought up on a farm near the Champlain fault, that peculiar structural feature interested him in geology. He graduated from McGill University in 1907, specializing in geology. In 1908 he received the degree of Master of Science and a fellowship at the Massachusetts Institute of Technology in Boston, where in 1912 he obtained the degree of Ph. D. In 1912 he was appointed lecturer to the department of geology and mineralogy at the University of Alberta at Edmonton with which he has been associated ever since 1913 as professor of geology. Doctor Allan had to organize the work of this new department, and is also responsible for the creation of the geological museum, later extended to include archaeological and ethnological collections of the Indians and Eskimos.

Between 1906 and 1918, Doctor Allan carried on extensive field work in British Columbia and Alberta for the Geological Survey of Canada. In 1919 he began a systematic investigation of Alberta's mineral resources for the provincial government, and was active in the organization of the Scientific and Industrial Research Council of Alberta.

As a consulting geologist, Doctor Allan worked on the proposed Spray Lakes water power project and the Ghost River project for the Calgary Power Company, and he acted in a similar capacity for the East Kootenay Power Company. He has investigated numerous petroleum, natural gas, coal and clay deposits in Alberta and metallic deposits in British Columbia.

Doctor Allan's first studies of the Turner Valley were undertaken in 1912, before the field was opened. He was the first to work out the geological structure of the Skiff Field, and his persistent confidence in the area resulted last year in the drilling by the Duluth Syndicate of its big gasser in the new field at Kinsella, in East Central Alberta.

Doctor Allan is a member of the Royal Society of Canada, Geographical Society of America, American Association of Petroleum Geologists, Canadian Institute of Mining and Metallurgy and other scientific organizations. Last March he was elected president of the Association of Professional Engineers of Alberta.

PERSONAL PARAGRAPHS

H. V. Foster, president of the Indian Territory Illuminating Oil Company, is spending his vacation in Rhode Island. Burdette Blue, vice president, and general manager, has again selected the lake region of Minnesota for the rest of the summer season.

Miles Lesh, advertising director of W-K-M Company, Houston, Tex., has left for California where he will spend two weeks' vacation.

* * *

John R. Suman, director of the Humble Oil & Refining Company, Houston, Tex., has returned from a trip to Chicago and other points.

* * *

G. T. Stewart, assistant sales manager for the Austin Machinery Corporation, Muskegon, Mich., is in Tulsa for the interests of his company.

* * *

A. J. Leverson, chief geologist of the Independent Oil & Gas Company, Tulsa, has returned from a business trip to Fort Worth and West Texas.

* * *

W. L. Harris, of Tulsa, is the new head of the legal department of Ramsey Petroleum Corporation. He was formerly with the Mid-Kansas Oil & Gas Company.

* * *

J. L. Charlton, land man for the California Company, is now back at his office in Dallas, Tex., after spending several weeks in the San Antonio, Tex., district.

* * *

J. C. Wilhelm, chief gauger at Bartlesville, Okla., for the Prairie Pipe Line Company, is acting as district foreman at Nowata, Okla., while J. A. Coyle is on vacation.

* * *

J. E. Parrot, with the Independent Oil & Gas Company, and Mrs. Parrot, have been spending a two weeks' vacation in East Central Texas and Shreveport, La.

* * *

W. J. Durham, formerly connected with the Peden Company, has accepted a position with Beaumont Cement Sales Company, to take charge of sales in New Mexico.

* * *

Joe Grogan, pipe line superintendent of the Simms Oil Company, Dallas, Tex., is getting around again after being laid up for awhile by injuries sustained in an automobile accident.

* * *

W. H. Harris, Jr., former assistant treasurer in charge of all field agents for the Simms Oil Company, Dallas, Tex., has been trasnferred and made assistant district manager.

* * *

W. E. Ramsey, California and Mid-Continent operator, is recuperating in the Good Samaritan Hospital at Los Angeles from a recent illness and expects to be back on the job again shortly.

* * *

Mr. and Mrs. George Pfau are spending a two weeks' vacation at various places in Indiana. Mr. Pfau is refinery superintendent of the Texas Pacific Coal & Oil Company, Fort Worth, Tex.

* * *

Howard Pyle and family have driven to points in New Mexico and Colorado for a vacation trip. Mr. Pyle is assistant superintendent of the land department of the Shell Petroleum Corporation, Dallas, Tex.

* * *

C. A. Pears, in charge of the experimental laboratory of the Texas Pacific Coal & Oil Company's refinery at Fort Worth, Tex., has been transferred to Caddo, Tex., to one of the company's gasoline plants.

* * *

S. P. Coblentz, president of the Motor Fuel Products Company, Laredo, Tex., refining subsidiary of the United Gas Company of Houston, Tex., spent several days at offices of the latter company in Houston.

* * *

J. C. McIntyre, president of the Warner-Quinlan Company of Texas, has returned to Houston, Tex., from a business trip to New York. Mr. McIntyre has just recently established his residence in Houston following the removal of the offices of the company from Dallas to Houston.

* * *

Theodore C. Towl, director and general superintendent of the Southwest Pennsylvania Pipe Lines with offices in Pittsburgh, Pa., returned recently from an extensive trip through the oil fields in Oklahoma, Kansas and California, and in returning via the northern route visited Alaska, and Lake Louise and Banff in the Canadian Rockies. He was accompanied by Mrs. Towl.

S. H. Casteel, of the Landreth Production Company, has been in Southwest Texas for several days looking over the situation.

* * *

B. C. Clardy and family are taking a vacation on the Gulf Coast, spending most of their time around Palacious. Mr. Clardy is in the crude oil purchasing department of the Shell Petroleum Corporation, Dallas, Tex.

* * *

R. M. Harris, of the Richfield Oil Company of California, has been placed in charge of all petroleum and geological engingeering work for the company's Pacific Coast division comprising all fields in Ventura and Santa Barbara Counties.

* * *

Harry H. Power is now chief petroleum engineer of the Gypsy Oil Company, succeeding R. L. Wright, resigned. Mr. Power is also Mid-Continent chairman of the American Institute of Mining and Metallurgical Engineers.

* * *

H. A. Shaffer, representative of the Hughes Tool Company, is back in Texas after a South American and European trip on which he started last June. He spent 11 months in the various oil fields of the world, visiting almost all of the oil-producing countries, except Russia.

* * *

H. R. McKnight, vice president of the Corona Silica, Inc., Rogers, Ark., has returned to Houston, Tex., from California, where he was called several weeks ago by the death of his mother. After a short trip to his plant at Rogers, he will return to the Gulf Coast where he spends most of his time.

* * *

J. G. Dickerson, superintendent of production in Kansas for Empire Oil & Refining Company for the past four years, has resigned to become manager of the land and lease, geological and production departments of the Natural Gas Company of America, with headquarters in Kansas City, Mo. He will be succeded at Eldorado, Kans., by Charles S. Warren.

* * *

Dr. and Mrs. James Boggs Boen, of Oklahoma City, Okla., announce the marriage of their daughter, Lovenia Caroline, to James Dale Thompson on June 28. Mr. Thompson is the junior member of the consulting engineering firm of George & Thompson and a graduate of the University of Oklahoma. Mr. and Mrs. Thompson are at home to their friends at 2526 West Nineteenth Street, Oklahoma City.

* * *

J. W. Carnes, vice president in charge of sales for the Sinclair Refining Company; Lloyd P. Lochridge, manager of the division of lubricating sales, of the same company, New York; and W. T. Dinkins, sales manager of the Pierce division, St. Louis, Mo., have completed a business trip to Fort Worth, Tex., where the Sinclair Refining Company has announced new marketing headquarters, with offices in the new Dulaney Building which will be named the Sinclair Building.

* * *

Norbert Gella, inventor of the "Elbof" method of geoelectrical investigation, recently left Houston, Tex., for Chile, South America, to form a new organization, in association with the Chilean government, for the purpose of doing geophysical research work in locating oil deposits and ore bodies. One crew is now on the way from Germany to Chile to carry out these investigations, using all geophysical methods. Dr. H. A. Roerig is now in charge of the Houston office of Piepmeyer & Company.

* * *

Don Connelly, Indian Territory Illuminating Oil Company, who has been supervisor of acreage, with headquarters at Bartlesville, Okla., has been promoted to the executive department as junior executive. H. M. Mauldin, former district land man at Wichita, Kans., has been assigned the duties formerly attended to by Mr. Connelly. Paul W. Fleeger, who has been engaged in field work in Kansas and Oklahoma, takes the place of Hugh Mauldin, who will make Bartlesville his headquarters. R. G. Blynn, subsurface geologist, is now in charge of the Wichita office. Another change brought Don Coleman, sectional geologist for Kansas and Colorado, from Wichita to Bartlesville. J. C. Martin, Jr., who has been doing geological work at Oklahoma City, Okla., has been promoted to the position of subsurface geologist and sent to Wichita, Kans. James S. Kaufman has been promoted from instrument man to geologist and sent to Kansas.

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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

TEMPERATURES FOR CRUDE OIL DELIVERIES

What is the lowest temperature of crude oil that could ordinarily be run in a pipe line and how high does the temperature run in the hottest days of summer?—S.

The temperature at which a crude oil may be run through a pipe line depends on composition of the oil which is usually reflected in the viscosity. If the oil is very light, that is high gravity, the viscosity will be low with the result that temperature would have little influence on the flow through the line. In some districts the viscosity is exceptionally high so that artificial heating becomes necessary in order that proper flow may be accomplished.

The temperature of pipe line crude may go as low as 30° F. in the winter and the summer extreme approximately 100° F.; the average temperature of the oil in the line during the greater part of the year runs between 60° and 70° F. This is for Oklahoma conditions. The records at an Oklahoma refinery show that crude was delivered during August at 88° F., and that the lowest temperature was 42° F. for oil delivered during February.

The material following is from Petroleum Production Engineering, by L. C. Uren, page 555: "Determination of the average temperature of the oil during the period of flow, on which the viscosity variable depends, is admittedly one of the most difficult and uncertain elements involved in pipe line design. The temperature will drop rapidly at first, near the pumping station, and less rapidly as the difference between the oil and the earth decreases. The heat lost varies with the velocity of flow (time), the area of contact surface between the heated pipe line and the surrounding earth, the specific heat of the oil and the difference between the temperature of the earth and that of the heated oil." Also on page 555: "In estimating the average temperature some engineers use the following approximate formula, which is said to agree very closely with actual temperature conditions in existing lines—Average temperature = (1/3 initial temperature) + (2/3 final temperature). Thus, if the maximum initial temperature to which it is considered advisable to heat the oil is 160° F., and the lowest temperature permissible for efficient pumping is fixed at 120° F., the average temperature in the line during transit is 160/3 + 2 × 120/3 = 133.3° F."

W. G. Heltzel states in The Oil and Gas Journal, June 5, 1930, "Fluid Flow and Friction in Pipe Lines:"

"In transporting crude oils in pipe lines, it becomes necessary, in the case of very viscous oil, to heat it before it is pumped through the pipe line. The economical temperature to which the oil should be heated is that temperature just beyond the point where the temperature viscosity curve begins to become parallel with the temperature axis, for to heat it much beyond this point only adds heat to the fluid to be lost in the first several miles of the pipe line, with little or no benefit derived from the added heat in reduced viscosity. Where petroleums are to be heated in transit, the heating should be done under pressure, in closed heaters rather than in tanks; for the heating under atmospheric pressure will cause a high evaporation loss and consequently a higher viscosity at any given temperature than before it was heated. The heating of petroleum to reduce the viscosity before pumping it into the pipe lines will be found costly, and where it is possible, as in the case of some high paraffin base crude oils, and conditions warrant, it might be more economical to use large lines and pump the oil cold, than to use a small line and heat the oil. There are crude oils, however, that cannot be transported through pipe lines without heating them first."

CALCULATING HEATING VALUE OF OIL FROM GRAVITY

We note with interest that in your issue of May 22, 1930, you give the formula B.t.u. per pound equals 18,650+40(A.P.I. gravity—10). We have often used this formula and would like very much to know its origin. We have wondered also why this formula might by some people be preferred to that given by the Bureau of Standards Misc. Pub. 97, viz. "B.t.u. per lb. equals 22,320—3,780 (Sp. gr.)". Your comments on the above subject will be appreciated.—R. H. P.

The 18,650 formula originated with Sherman and Kropff as derived from experimental examinations of 64 samples of petroleum from many different parts of the United States. The formula because of its simplicity is preferred over many of the other formulas that have been proposed for calculating heating value of oil. The work of Sherman and Kropff was first published in the Journal of the American Chemical Society, Vol. 30, Pt. 2; 1626, 1908, and the direct quotation following explains how the formula was derived.

"As a rule the specific gravities were determined by means of a pycnometer and the corresponding Baume numbers are taken from the specific gravities according to the 'American standard' table as given in Van Nostrand's Chemical Annual, 1907. The heats of combustion or calorific powers were in all cases determined by means of the Atwater-Mahler apparatus.

"It will be seen that throughout the range of oils included in the table there is a general tendency toward a fairly regular decrease in calorific power as the specific gravity increases and the Baume numbers decrease.

"In the cases in which an approximate estimate of the calorific power is most likely to be useful, the expression of density in terms of the Baume* scale and of calorific power in British thermal units per pound will probably be most common. By grouping the samples falling within certain limits of Baume density and plotting the average figures, it was found that the approximate average relation between Baume density and calorific power in B.t.u. may be expressed as follows:

$$B.t.u. = 18{,}650 + 40\ (\text{Baume gravity} - 10)$$

"This formula was then applied to the data of the individual samples. In the column headed 'B.t.u. calculated' and 'percentage error' are given for each sample the calculated British thermal units and the percentage difference between the calculated and the determined values.

"It will be seen that the difference between the calorific power as determined in the bomb calorimeter and as calculated from the formula here proposed is usually small. In only one-ninth of the cases is the difference greater than 1 per cent, in only one-thirtieth is it greater than 2 per cent; in no case is it as great as 3 per cent. The samples examined were all believed to be of fair average commercial purity; the discrepancies might readily be larger in oils grossly contaminated with water or suspended matter, but the majority of such cases could probably be reorganized by superficial examination.

"In view of the number of samples examined and the fact that about half of them were selected as representative of the products of the principal oil fields of the United States, while the remainder were taken at random from commercial sources, it would seem safe to infer that for commercially pure samples of ordinary American petroleum oils, varying from heavy crudes to gasoline, the calorific power may be predicted from the density with about as close an approximation to accuracy as is usually obtained in calculating fuel values from chemical analyses.

"If it be desired to estimate the calorific power in terms of calories per gram, or to base the estimate upon specific gravity, or both, it need only be remembered that calories per gram × 1.8 = B.t.u. per pound, and that specific gravity = $\frac{140}{130 + Be°}$, according to the standard used in obtaining the Baume figures here given; or the following estimate may be used, which being obviously only an approximate indication, is perhaps less likely to be misleading than is a formula:

Specific gravity	Indicates calories
0.7 -0.75	11,700-11,350
0.75-0.8	11,350-11,100
0.8 -0.85	11,100-10,875
0.85-0.9	10,875-10,675
0.9 -0.95	10,675-10,500

"Of the 63 samples here examined which fall within these limits of specific gravity, only two fall outside of the indicated range of calorific power by as much as 100 calories, and only seven by as much as 50 calories."

*Since this article appeared Be. degrees have been replaced by A.P.I. degrees, so the latter are now commonly used in the formula.—Ed.

KEROSENE AND OTHER HEAVY OILS FOR MOTOR FUELS

If a large demand were created for kerosene and heavier oils for use in automobiles to take the place of gasoline, would this condition bring about higher prices for such products?—C. G.

The use of kerosene, or other distillates, as motor fuel must depend upon the development of a suitable engine and the wide use of it. At the present time the utilization of kerosene as a motor fuel is confined to tractors and to a small extent it is used in special airplane engines. There are many conditions surrounding the present market price of gasoline. The larger part of the refining cost is charged to the one product, gasoline, and this item would naturally be transferred to kerosene if market conditions were changed to make it the product in great demand. The taxes now collected on the sales of gasoline would in a very short time be applied against kerosene sales.

While the quantity of gasoline now manufactured from petroleum is much larger than any other product, the yields can be reversed if sales conditions were favorable. In 1899 the percentage of gasoline and kerosene made in American refineries averaged 12.8 and 65.9 per cent, respectively, from the crude oil; the corresponding yields for 1928 were gasoline, 37.5 per cent, and kerosene, 6.6 per cent.

This subject has been covered in detail by G. A. Greene in his article, The Employment of Less Volatile Fuels for Motor Coach Engines," Journal Society Automotive Engines, Volume 25, Page 604, 1929. In this article a cost analysis of the products obtained from crude oil in 1928 is given as follows:

	Per cent	Value per gal. cents	Value per 100 gals.
Gasoline and naphtha	41.3	6.75	$2.79
Kerosene	6.6	6.25	0.41
Fuel oil, including gas oil	46.7	2.50	1.17
Lubricants	3.8	13.00	0.49
Miscellaneous and loss	1.4	..	....
Wax	0.2	30.00	0.06
Value of products including gasoline			4.92
Value, exclusive of gasoline			2.13

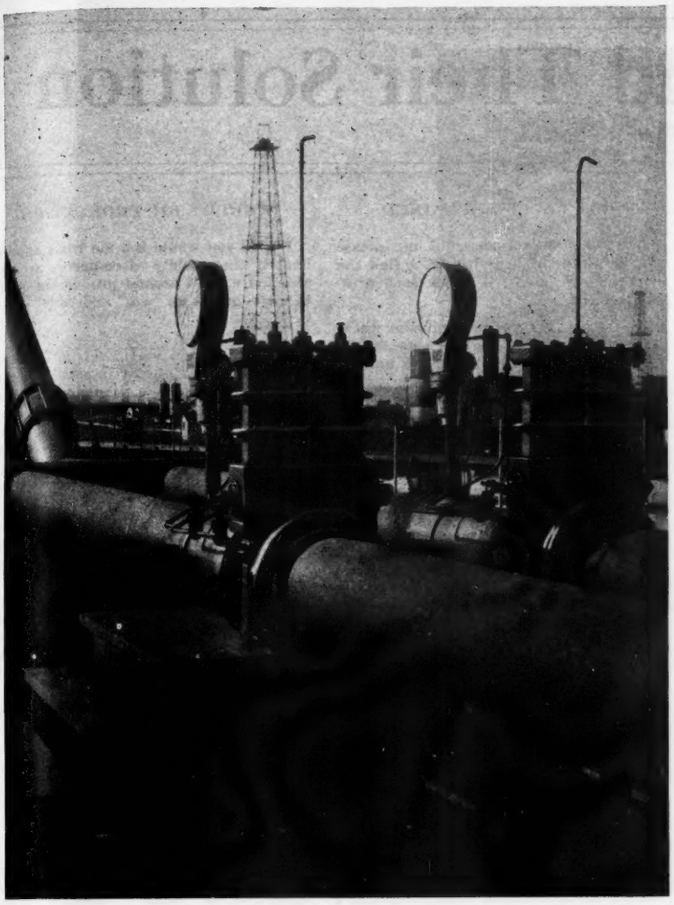
The yield of gasoline and naphtha given in this table appears to include the natural gasoline used at refineries. It is shown that in every 100 gallons of crude oil the gasoline proportion is valued at $2.79, while the value of all other products, representing 58.7 per cent of the crude, is given as $2.13. Kerosene at the refinery is seen to be only a trifle cheaper than gasoline; gas oil at 3.25 cents per gallon is practically half the refinery price of gasoline. Hence, if kerosene and gas oil become largely used as motor fuel in automobiles, there would be no tremendous price advantage to the consumer over the price of gasoline, because the costs of distribution and retailing must be the same irrespective of the character of the oil fuel.

KEROSENE TREATMENT FOR CANCER

Could you give me any information about the claim that kerosene may be used for the treatment of internal cancers? This remedy has, I understand, been recently discovered and I would like to know if there is any merit for such use of kerosene?—T. B. H.

Kerosene has been used as an internal medicine for the treatment of some forms of colds and it is also a fact that certain bacteria are killed when the parts are treated with kerosene.

We have no details covering the reported application of kerosene for the treatment of cancer other than the statement from Auckland, New Zealand, that a patient suffering from what the doctors diagnosed cancer had been benefited by kerosene. It has been reported that the warm oil was injected into the system. The process was unpleasant and painful. For one year the patient was under treatment and at the end of that time was discharged from the Auckland Hospital as cured. It is claimed that there has been no recurrence, a recent examination revealing only a cavity where the growth formerly existed.



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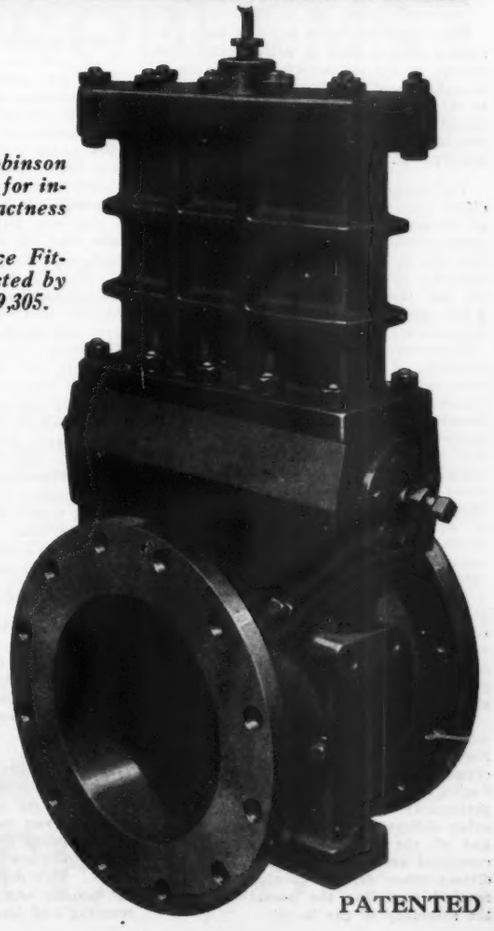

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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

EFFECTS OF DISSOLVING GAS

Have experiments of any sort been performed with a view of determining what change in the characteristics of crude is brought about by dissolving natural gas in it? It would seem as though gas dissolved in oil must affect the oil's viscosity and its surface tension and probably its gravity.—F. S. E.

Various questions have arisen as to the effect upon the characteristics of crude oil brought about by dissolving gas in it under pressure. Investigations have shown that gas in solution in an oil affects the viscosity and the surface tension of the oil, but the effects on the volume and A.P.I. gravity of the oil have not been determined.

Experimental work pertaining to the solubility of gas in oil conducted by the Department of Commerce in the oil recovery laboratory of the United States Bureau of Mines in Bartlesville, Okla., showed that marked increases in volume and in A.P.I. gravity of the oil are caused by the solution of gas in the oil under pressure. Conversely, decided decreases in volume and in A.P.I. gravity of the oil were found to take place concurrently with the liberation of gas from solution and the dimunition of gas pressures.

The phenomena produced by dissolving gas in oil or liberating gas from oil which were observed in the experimental work have an important bearing on oil recovery experiments, oil field production problems and the estimation of underground reserves.

The experimental findings of the Bureau of Mines, which are described in Serial 2,893, may indicate conditions comparable to those encountered in producing oil from sands. However, more experimental work must be performed, using different oils and different gases, and all the experimental data must be compared and reconciled with field conditions before definite conclusions can be reached regarding the actual effects of the solubility of gas in oil.

POOL EXTENSION INDICATED?

Observations with the magnetometer in Lea County, New Mexico, show a trend of the highs running northeasterly to about the center of Gaines County, Texas. Does this indicate an extension of the Hobbs Pool in this direction? I also would like to know where I can read up on the magnetometer and what its demonstrated value in locating oil really is.—A. J. S.

In The Oil and Gas Journal for June 26, 1930, is an article, "Magnetometer Results in Lea County," by L. Spraragen which deals with the subject concerning which you ask. This department is unable to give a direct answer to your inquiry, which is rather one to be submitted to a geologist familiar with that region. It is assumed that other geological features would be involved in a survey of the Gaines County area. Exploration for oil is under way and showings have been found in Andrews County, just to the south of Gaines County.

For general information regarding the magnetometer you are referred to articles by Mr. Spraragen that appeared in The Oil and Gas Journal September 27 and October 4, 1928, followed by a long series published intermittently from that time up to the present.

These first two articles are general in their nature and were prepared especially for The Oil and Gas Journal by Mr. Spraragen to answer just the kind of inquiries you have made. Several books have been published on geophysical instruments, but they are more or less technical. Mr. Spraragen has an intimate knowledge of his subject and he has discussed it in a way that can be readily understood by the layman.

RIVER BED LEASE IN TEXAS

Can you settle an argument for us? The statement was made that an oil and gas lease granted in Texas extends along the Colorado River bed for more than 60 miles under a law relating to leases on river beds. This statement was denied. If such a lease was granted, can you tell me whether it is the longest in the State? If you can tell me who obtained the lease, etc., I shall appreciate it very much.—E. U. N.

The lease to which you refer is probably one that extends along the Colorado River bed the full width of Coleman and McCulloch Counties, a distance of 66 miles. It was conveyed about two years ago and was said to be the longest in Texas. It was granted to Fred F. Harris, Roth & Faurot and others from the State Land Department in accordance with the statute governing river bed leases. The Colorado River forms a natural boundary between Coleman and McCulloch Counties and its bed was leased for the regular fee of 10 cents an acre, with survey and checking fees added. The land involved, according to the surveys, contained about 3,500 acres.

LITERATURE ON OIL SUBJECTS

I am trying to find out where I can secure some information or books on repressuring oil sands. Also I would like some information on scouting and leasing.—N. D. D.

If you will obtain from the Government Printing Office, Washington, D. C., a copy of its list of publications it is probable you will find there bulletins and technical papers covering what you want to know about repressuring oil sands. This department is unable to refer you to any comprehensive work on scouting and leasing.

"GAS LOCK" EXPLAINED

Will your department tell me please what is meant by "gas lock"? I find the term used in an article about back pressure.—T. R. L.

On the upstroke of the traveling valve fluid is drawn into the working barrel, which is at atmospheric pressure until it has equalized with the external pressure. Any gas in solution expands rapidly in the barrel, with the result that under peculiarly unfavorable conditions there may be more gas than fluid in the barrel.

WHY WAS IT CALLED THAT?

PUKING

In the parlance of the oil refinery "puking" refers to the boiling over of a still so that part of the contents, whether crude oil or some other product, passes through the condensers into the receiving house. It generally results in the contamination of refined products in the run-down tanks. It is usually caused by the still getting a "shot" of water or too much steam. It is not as common now as it was when practically all distillation operations took place in shell stills. Not a nice word, maybe, but, like many others in the oil industry, realistically descriptive.

On the downstroke the traveling valve is held closed by the weight of the column of oil in the tubing. This pressure may be as much as 1,000 pounds to the square inch.

Before the traveling valve can open on the downstroke the fluid between the standing valve and the traveling valve must exert against the latter a pressure exceeding that exerted by the fluid above the traveling valve. This condition prevails when the traveling valve moves downward against a body of relatively uncompressible fluid in the barrel and the traveling valve opens as it should; but when the barrel is filled largely with gas instead of oil, the gas may be compressed without the pressure required to open the traveling valve. The pump then is said to be "gas-locked."

Better to visualize these conditions let it be noted that gas under atmospheric pressure must be reduced to approximately one-sixty-sixth of its volume to reach 1,000 pounds per square inch. Thus, a 5-foot barrel filled with gas should not reach 1,000 pounds pressure until the stroke has come within 1 inch of its limit.

DIAMETERS OF CASING

What is the average diameter of pipe used in drilling in gas fields? What is the average diameter of pipe used in drilling in oil fields?—W. B. N.

It is assumed that in speaking of pipe you mean casing. There is a wide variation in sizes used in different fields, but there is no difference in casing diameter as between a well drilled for gas and one drilled for oil.

The usual practice in cable tool drilling is to start with a 20 or 15-inch casing for the surface string and gradually reduce the hole to take 12¼, 10½, 8¼, 6⅝ and 5⅛-inch casing. If the well is drilled with rotary equipment some of these strings of casing may be eliminated.

The methods of drilling for oil and gas are similar so casing sizes would be influenced more by the drilling method employed than by the character of material being drilled for.

WORLD'S OIL PRODUCTION

I wish you would tell me what approximately the world's oil resources are and also the world's annual production of oil. What is meant by "wet" and "dry" oil?—C. B. A.

Your first question is very difficult to answer for it is almost impossible to secure complete data of all fields upon the same basis of estimate at the same time.

In 1923 Valentin R. Garfias compiled data and published it in a book entitled "Petroleum Resources of the World," but this is very much out of date at this time.

The American Institute of Mining Engineers attempt each year to have a review of oil resources for this and foreign countries, but it is never complete.

Other societies and government bureaus gather statistics on this subject and publish them from time to time, but to give even an approximate estimate of the world's oil resources would be a difficult matter.

But we can give you the world crude oil production for 1929 as compiled by the Division of Petroleum Economics for the United States Bureau of Mines, as follows:

Country—	Amount*	%
United States	1,006,000	67.6
Venezuela	137,000	9.2
Russia	103,000	6.9
Persia	45,250	3.0
Mexico	44,689	3.0
Netherlands East Indies	37,924	2.6
Rumania	34,930	2.3
Colombia	20,385	1.4
Peru	13,404	.9
Trinidad	8,810	.6
Argentina	8,800	.6
India, British	8,470	.6
British Borneo (Sarawak)	5,277	.4
Poland	4,953	.3
Japan (including Taiwan)	2,010	.1
Egypt	1,866	.1
Ecuador	1,351	.1
Sakhalin, Russian	1,160	.1
Canada	1,133	.1
Iraq	798	
Germany	711	
France	516	.1
Czechoslovakia	93	
Italy	44	
Other countries	30	
Total	1,488,604	100.0

*Figures in thousands of barrels.

Your question concerning wet and dry oil is not clear, as this department never has heard of oil being classified in that way. It seems quite certain that you must mean wet gas and dry gas. Wet gas is a natural gas that contains ethane, propane, butane or hexane as well as methane. These hydrocarbon gases can be reduced to gasoline by compression or absorption methods or a combination of both. Dry gas is usually made up chiefly of methane and is not easily reduced to the liquid state.

MEANING OF ABBREVIATIONS

Please tell me the meaning of the following abbreviations shown in the logs of operation in the different fields: Cmtd., S.D., O.W.D.D., W.O., T.D. and S.O.—W. B. N.

The meanings of the abbreviations follow: Cmtd., cemented; S.D., shut down; O.W.D.D., old well drilled deeper; W.O., waiting on cement (W.O.C. is the more common abbreviation); T.D., total depth; S.O., show of oil.

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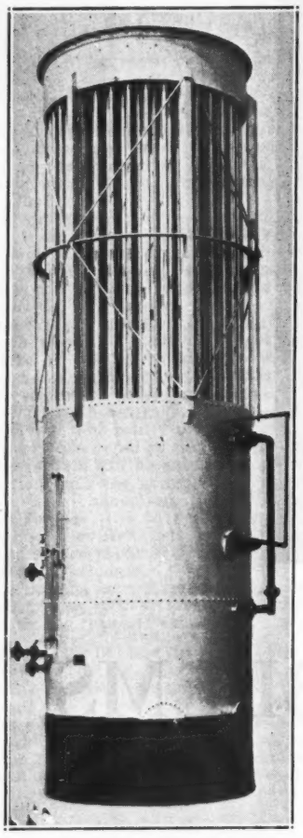
EQUIPMENT AND SUPPLIES

REMOVES STEAM CLOUDS AND REDUCES TROUBLES

The Tulsa type feed water purifier and condenser, manufactured by the Tulsa Boiler & Machinery Co., Tulsa, has been developed primarily to condense exhaust



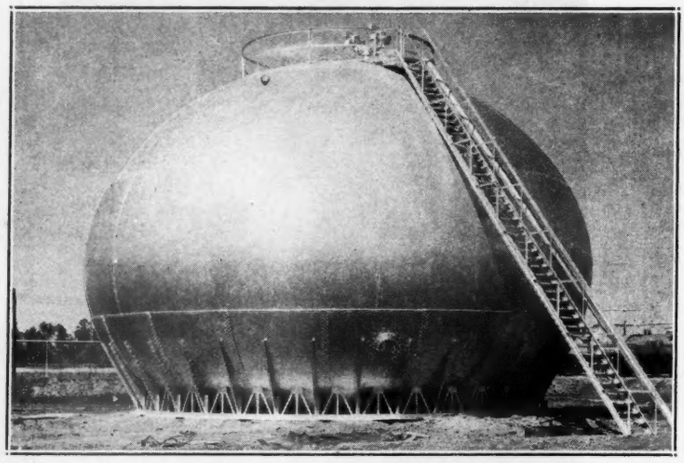
steam on drilling wells. Increased boiler capacity, muffling of engine exhausts, removal of steam clouds from derrick floor and reduction of boiler trouble have made faster drilling possible at lower costs.

FOR SINCLAIR POWER HOUSE

The Sinclair Refining Co. has purchased for installation in its new power house in Wellsville, N. Y., the following equipment manufactured by the Westinghouse Electric & Manufacturing Co.: Two 750 kilowatt, 80 per cent power factor, 2,300-volt, 3-phase, 60-cycle generators with embedded thermo-couples for measuring internal temperatures and with direct connected exciters; two 150 horsepower, 327 r.p.m., 2,200-volt, 3-phase, 60-cycle, 80 per cent power factor, type HR synchronous motors for driving air compressors; two motor-generator sets to provide field excitation for the above mentioned motors; two 175 horsepower, 328 r.p.m., 220-volt, 3-phase, 60-cyle, 80 per cent power factor, type HR synchronous motors for driving air compressors; two motor-generator exciters for these motors; two magnetic, full-voltage starters for the 175 horsepower motors, and complete switching equipment for this apparatus. All this equipment is now in service with the exception of the two 175 horsepower motors and their exciting and starting equipment.

The Chicago Pump Co., Chicago, is now represented in Atlanta, Ga., by R. J. Welsh.

NEW STORAGE TANK IS MADE IN SPHEROIDAL SHAPE



A new type of tank has been developed for the storage of volatile liquids under pressure. It is called the Hortonspheroid because of its unusual spheroidal shape. The Hortonspheroid was designed to provide storage which will withstand internal pressure, in large units at a more economical cost than the type of containers used in the past for pressure storage. Cylindrical tanks with dished ends and other ordinary types of tanks are satisfactory for small capacities, but beyond certain limits their construction becomes difficult and their cost excessive. The use of small multiple units is also costly.

Analysis of the construction of ordinary pressure tanks shows that much material is used primarily to maintain the shape of the container. Therefore, in order to achieve a more economical type of structure it was necessary to design a tank in which all material is used for a direct purpose. In other words, there should be as little tendency as possible for the tank to change shape.

This could be done by designing a tank as nearly as possible the shape which a flexible container, such as a rubber balloon, would take when filled with water, subjected to an internal gas pressure and placed on a flat surface. The result is a spheroidal shape with a flattened bottom.

According to a fundamental law of gravity, any given volume of liquid contained in a space of stated height will have approximately the same external bursting force through a vertical section. In an ordinary tank, this entire bursting force is resisted by the vertical shell. While the roof and bottom contain almost as much metal as the shell, they take none of the stresses. The only useful purpose they serve is to keep the contents of the tank from escaping.

In the spheroidal design of tank, the bottom, shell and roof form a more or less continuous curve. Much of the bursting force is transferred to the roof and bottom and all of the metal is used for effective stress purposes.

The spheroidal shape also proves to be an excellent one to meet the conditions encountered with various combinations of liquid pressure. Increasing the gas pressure tends to make the structure more spherical and increasing the liquid tends to flatten it out. The only place where the tendency of the structure to change shape is sufficient to require reinforcing is a section near the bottom. Here supports are placed to take care of the overhanging liquid load.

Natural gasoline, high test and even some ordinary motor fuel gasolines boil at normal temperatures. When boiling takes place the liquid is changing to a vapor throughout the entire body of the liquid and evaporation loss is excessive unless the container in which such products are stored will withstand pressure. The Hortonspheroid will be used for this type of products.

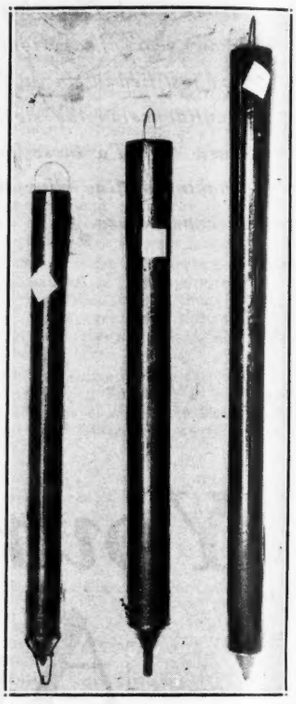
The M. H. Detrick Co., Chicago, manufacturer of flat suspended arches and sectional supported walls, has established an office in Tulsa under the direction of Henry O. Johanson.

TIME IS SAVED IN DRIVING CATHEAD OFF THE SHAFT

Ordinarily it is said to take two men 8 to 24 hours to drive a cathead off a shaft, but with the cathead puller one man can do it in about five minutes, it is asserted. All that is necessary is to clamp the straps of the puller around the cathead hub, bring the lever up to the headboard and start the engine. The cathead puller is manufactured by the Globe Oil Tools Co., Los Nietos, Calif., and has been on the market for about a year and a half, during which time there is said to have been no case of breakage or failure. The entire puller is made from chrome nickel steel scientifically heat-treated, and is so designed as to have plenty of cross-sectional strength to pull off the tightened cathead.

MAKING SHELL OF PAPER FOR NITROGLYCERIN USE

The Safety Torpedo Co., Tulsa, is manufacturing a paper shell for nitroglycerin to be used in shooting wells, also paper boots for nitroglycerin cans. The inven-



tor of this paper shell states that it is tough and elastic; oil, acid and water proof, and unaffected by weather conditions.

Heavy cardboard tubes are treated with a special baking varnish and successively coated and baked until this varnish thoroughly impregnates the fibre. It is said that the total baking time is about 66 hours for each shell, and the heat is applied at about 225° F. The shells are made in various sizes and are equipped with bales and hooks so that they may be used in series in the usual manner.

After the charge has been set off in the hole the paper making up the shell is thoroughly disintegrated and does not tend to bridge in the hole. The shell being of paper, it is asserted that the danger of premature explosion due to static charge is reduced to a minimum. The officers of the company are B. D. Allen, Highland, Kans., president; A. M. Ward, Tulsa, vice president and treasurer; and A. M. Widdows, Tulsa, secretary.

SMALL COOLING UNIT OFFERED

The new type G Marley spray tower made by the Marley Co., Kansas City, Mo., is intended to fill the need for a compact, efficient and durable cooling unit for capacities of not exceeding 12 gallons capacity. Cast iron is used wherever possible, the water box, main tower framework and bracing being of this material. The entire main framework can be assembled in a few minutes. The louvres are slip-fit requiring no nails or screws. They are of California redwood. The patented louvre post of slip-fit construction eliminates nails and screws.

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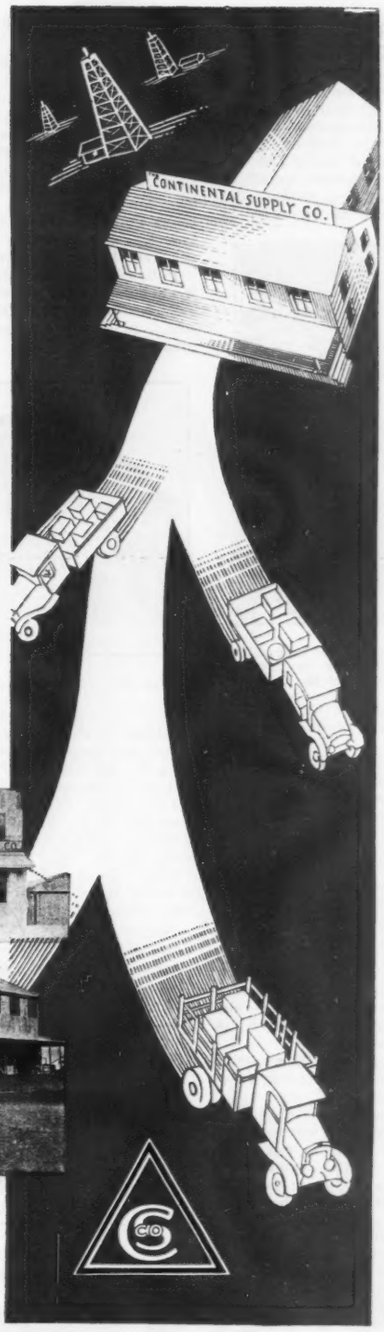

Kevin, Montana

McCamey, Texas

Houston, Texas

Above
Casper, Wyoming

At right
Hebbronville, Texas

Pyote, Texas

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CONTINENTAL

EQUIPMENT AND SUPPLIES

BAASH-ROSS TOOLS MUST UNDERGO EXACTING TEST

It is generally recognized that a principal cause of failure of drill collars and drill stems has been the removal of too much metal in certain limited areas, owing to the difficulty of boring the water course through the entire length of a forging 40 to 50 feet long, without the drill running too close to one side or

Showing the large diameter of mandrel in relation to size of drill and the internal water course for chips.

overlapping or boring out of alignment where the holes from opposite ends meet in the center.

To guard against the delivery of drill collars or stems which might fail in service from this cause, all Baash-Ross tools of this class are tested by passing entirely through them a straight, stiff rod which has a clearance of only one-quarter inch on the water course diameter in the smaller sizes, and three-eighths inch in the larger, up to 8⅝-inch diameter.

In the boring process formerly in general use, the drill is carried at the end of a mandrel, through which water or air is circulated to cool the drill and force the chips back outside the mandrel during drilling. The mandrel must be considerably smaller than the bore hole to provide sufficient clearance.

It has been necessary to build a special machine to insure drilling these long forgings straight and "centered" with accuracy. This machine carries the drill on a steel mandrel of a diameter which nearly fills the bored hole. Fluid is circulated around the mandrel, at 125 pounds pressure, for lubricating and cooling the drill, and carrying the chips away through a water course inside the mandrel.

The drill is stationary, the work revolving around it. The added stiffness imparted by the maximum diameter of the mandrel, and the fluid pressure which fills the small space between it and the hole, reduce the tendency of the drill to vary its course.

Experience is said to have shown that 98.9 per cent of the drill collars and drill stems bored on this machine pass the exacting Baash-Ross test, which insures that the factor of safety to which they were designed has not been impaired by inaccurate workmanship.

The Fuller Lehigh Co., Fullerton, Pa., manufacturers of pulverized-coal firing equipment and Bailey water-cooled furnace walls, announce the opening of a new sales office in the Candler Building in Atlanta, Ga. J. McC. Hill is in charge.

Concluding 41 years of continuous service with the General Electric Co., John T. Broderick, secretary of the company's manufacturing committee, retired from active service July 1.

VOGT COMPANY OBSERVES ITS FIFTIETH ANNIVERSARY

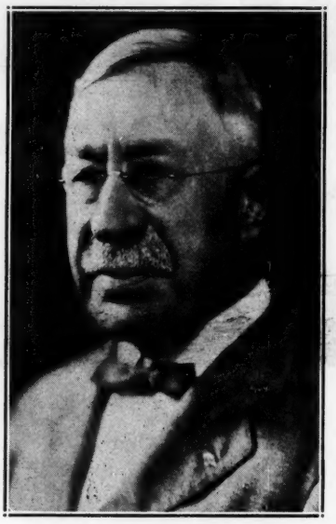
Fifty years of leadership on the part of Henry Vogt, president of the Henry Vogt Machine Co., Louisville, Ky., was commemorated by a luncheon at which the guests were the 945 employes of the company and industrial leaders of the city, all of whom paid tribute to the business and personal qualities of Mr. Vogt. The luncheon, held in the huge warehouse at Tenth Street and Ormsby Avenue, was a surprise to Mr. Vogt, affectionately known as "Uncle Henry."

Following an invocation by Rev. W. A. Scheer, pastor of the Bethel Evangelical Church, St. Matthews, Ky., all joined in singing "America." After the luncheon G. A. Heuser, Mr. Vogt's son-

The first plant, started in July, 1880.

in-law and secretary-treasurer of the company, acting as toastmaster, introduced the speakers, who included William B. Harrison, mayor of Louisville; Col. C. C. Mengel, president of the Mengel Co.; Capt. Charles F. Huhlein, president of B. F. Avery & Co.; Nicholas Kretzer, superintendent of the drop-forge shop; H. E. Vogt, plant superintendent; Julius Ellis, agent of the American Woolen Mills, and G. A. Daeuble, Jr., assistant secretary-treasurer.

Mayor Harrison, Colonel Mengel and Captain Huhlein told of their long association with "Uncle Henry" and of the characteristics which not only had made him successful but had endeared him to his thousands of friends. Mr. Kretzer, in behalf of the employes, presented to the head of the company a set of walnut office furniture. Service gifts were presented by H. E. Vogt to each of 15 men who had been with the company 25 years or longer. At the head of the list was Charles Clifford, in the service of the company 41 years. Each employe was



Henry Vogt

presented with an 8-day clock bearing an embossed picture of "Uncle Henry."

The Henry Vogt Machine Co., which is widely known in the oil industry as a manufacturer of boilers, valves, fittings and flanges, occupies a 19-acre plant. In 1880 Henry Vogt, now 74, opened a small machine shop at Hancock and Main Streets. From it grew the present important business.

Birdseye view of the present plant, covering 19 acres.

BUSINESS NOTES

John J. Somes has been made manager of the Chicago office of the Terry Steam Turbine Co., Hartford, Conn.

James R. White has been made a vice president of Jenkins Brothers, New York, valve manufacturers, and appointed director of sales.

The Key Boiler Equipment Co., East St. Louis, Ill., has opened an office in the Mayo Building, Tulsa, with M. B. Crowe in charge.

F. M. Esch, in the Houston, Tex., office of Goulds Pump, Inc., for the last three years, has been transferred to Tulsa.

The Byron Jackson Co., Los Angeles, Calif., has arranged with the Norvel Wilder Supply Co., Houston, Tex., to represent its pump and tool divisions in the Gulf Coast territory.

A. I. Brainard, president of the Beaumont Iron Works Co., Beaumont, Tex., is making an extended trip through the West and Southwest Texas fields in a study of conditions bearing on manufacturing problems in the equipment business.

The Prest-O-Lite Co., Inc., New York, has placed in operation a new plant for the manufacture and distribution of dissolved acetylene at Casper, Wyo.

The Wagner Electric Corp., St. Louis, Mo., announces the combination of the sales office and service station for the Atlanta territory and the installation of both in the new fireproof building at 14-20 Alexander Street, N.W., Atlanta, Ga.

MEN KNOWN *in* THE EQUIPMENT FIELD

Jerome B. McMahon

Less than 10 years ago, Jerome B. McMahon, fresh out of Carnegie Institute of Technology, Pittsburgh, where he graduated as a mechanical engineer, procured a job with the National Supply Co. and was sent to Tulsa, where he was employed in the company's store and in field work having to do with his profession. He remained with the company for some time and then went to the Foxboro Co., Inc., which organization sent him to Texas, with headquarters in Dallas but with duties that took him to all the fields in the State and adjacent states. Four years of engineering and salesmanship in the southern fields passed by and Mr. McMahon was made district manager, his territory including Texas and Louisiana. Two years ago he was promoted to Mid-Continent district manager and transferred to Tulsa. Last week he left for Foxboro, Mass., as assistant sales manager for the Foxboro Co., Inc.

Mr. McMahon and his family, consisting of his wife and two children, will reside in Foxboro, but his duties are expected to bring him back to the southwestern fields on occasional visits.

Mr. McMahon is a native of Oil City, Pa.

DIRECTING BIRMINGHAM OFFICE

R. D. O'Neil has been appointed an engineer and sales representative for the American Meter Co., with headquarters in Birmingham, Ala. He will specialize in servicing the sale of Westcott orifice meters, Linderman orifice meters, metric indicating flow meters and rate volume controllers.

Mr. O'Neil has had extensive experience in the development, construction, specifying, application, testing and checking of plant, field and laboratory instruments. After graduating as industrial engineer from the University of New Hampshire in 1926, he went to the Pacific Coast as electrician for the Southern California Edison Co., later working as draftsman for John F. Willard & Sons in Los Angeles. In 1927 he entered the employ of the American Meter Co. in the Metric Metal Works in Erie, Pa.

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2500 feet
2500 feet
3500 feet

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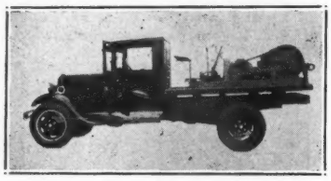
ANIES

No. 3

EQUIPMENT AND SUPPLIES

SPEEDWINCH COMBINES MANY GOOD QUALITIES

Portability, power and great maneuverability, combined with efficiency, wide range of action, convenience of operation and simplicity of design, are features



claimed for the Speedwinch, latest of the W-K-M line of portable winches, manufactured by W-K-M Co., Inc., Houston, Tex. The Speedwinch is a removable unit, which can be mounted upon or dismounted from the platform or the chassis of the new Ford four-speed truck. Power for operation is conducted continuously from the truck engine through a special power take-off provided with each unit.

Control of the winch can be arranged to permit operation from either of two positions, from the seat directly behind the winch or from a standing position on the ground at the left rear corner of the truck.

AGITATOR DESIGNED TO INCREASE FLOW OF OIL

An improved oil well agitator, put on the market by William Horn, Marietta, Ohio, is designed to provide a device which can be attached to a drill stem between the stem and the bit by means of which material at the bottom of an oil well may be agitated thoroughly and a better flow of oil assured.

Another object is to provide a device that will so agitate or mix sand, paraffin, cavings or other sediment which may accumulate in the bottom of an oil or gas well so that they can be removed with a bailer or sand pump.

This agitator is so made that when it is in use a pumping action takes place and material of a liquid or semiliquid nature in the bottom of an oil well is alternately sucked into and forced out of a barrel forming part of the attachment. By this arrangement a thorough agitation takes place and the walls of a well and the screen about the lower portion of a well casing are kept clear of sand and other substances likely to cause clogging of the well.

WIRE ROPE FILM

One of the first successful "talkie" industrial motion pictures has been produced by the American Steel & Wire Co., a subsidiary of the United States Steel Corp. featuring a trip through the mills in which wire rope is made, the illusion of actually being present is increased by the introduction of sound. As each stage of manufacture is viewed it is orally explained to the listener.

THIS DEVICE RECORDS THE OILINESS OF OIL

W. C. Wilharm, of the research laboratories of the Westinghouse Electric & Manufacturing Co., has developed a device for measuring the oiliness of oil. It consists of a weighted platform supported by three highly polished steel balls and resting on an equally highly polished steel plate which is covered with a film of oil. The steel balls cut through the fluid film and rest on the tightly adsorbed film built up by certain molecules present in the lubricant. The plate is fastened to a hinged platform which is raised by means of a crank.

Thus, the angle between the plate and the horizontal is increased gradually until the weighted platform supported by the steel balls moves, slipping over the adsorbed film of molecules. The slightest movement of the platform is rendered perceptible by the action of the voltmeter connected in a circuit which is made when the platform comes in contact with the needle after moving only .001 inch. The tangent of the angle between the plate and the horizontal attained when the platform begins to slide is the coefficient of friction.

In this way the device, determining the angle at which the balls will slide over their adsorbed film of lubricant molecules, measures the oiliness of the oil. Of course, the smaller this angle, the greater the oiliness and the better the oil for lubrication purposes.

W. J. McART JOINS THE PITTSBURGH EQUITABLE

W. J. McArt recently became a part of the Pittsburgh Equitable Meter organization working out of the Tulsa office.

W. J. McArt

Graduated from Case School of Applied Science, Cleveland, Ohio, in 1918, Mr. McArt entered the Army for the duration of the war. Returning then to Cleveland he became an inspection engineer for the Foote-Burt Co. Later he went with the City Machine Co. of Cleveland, where he stayed until 1925, then to accept a position with the Cyclone Fence Co. He did special missionary work with state highway engineers over the entire United States.

The training and field work done by Mr. McArt has been of a highly technical nature, especially fitting him for his work with the Pittsburgh Equitable Meter Co. Mr. McArt is married and resides in Tulsa.

SIGNODE STRAPS HOLD TANK INSULATION IN PLACE

Signoding oil tank insulation in Germany.

Insulation of oil storage tanks with material of high thermal efficiency is among modern scientific methods of effecting important economies. The principal purpose of this installation is the control of temperature of the oil in the tank so that the oil never will become too cold to flow freely nor warm enough to cause costly volatilization losses. Both the sides and the covers of the tanks are insulated. The insulation, notably on the tops, reduces the evaporation losses and "tank breathing." It also protects the steel from the elements and thus prolongs tank life. It is believed to decrease fire hazards due to static electricity.

Much progress has been made along this line in Germany, where they are insulating oil tanks with reported benefit. The insulating material is applied directly to the tanks. Signode steel straps are employed to hold it permanently in place. This device for keeping the insulation in position is distributed by the Signode Steel Strapping Co., 2600 North Western Avenue, Chicago, Ill.

In the insulation of large piping connections and large heating pipes Signode strapping is coming into wider use. The ease and speed of applying it, its permanence and its flexibility are advantages emphasized by the manufacturers of this product.

TUBING TONGS DESIGNED TO INSURE PERFECT FIT

Whether the tubing is new or old, thick or thin, the three-jaw double-die construction of the new Oilwell tubing tongs virtually eliminates the danger of crushing or denting the tubing. The construction of the jaws and the arrange-

ment of the dies is a feature. The inside of the jaws is machined and reamed accurately to size to give a perfect fit around the tubing. Extra large steel pins are used in connecting the jaws, as well as the handle. They prevent sagging or misalignment of the jaws.

Two tool steel dies are used, one in the back jaw and one in the front jaw, both of which are engaged when the jaws are closed and the tongs are in operation. This feature provides for a positive grip when making up or breaking out tubing. Die set screws have flat heads for removal with wrench and the screw holes are centered in the dies, giving full service on four die cutting edges.

The sure, quick gripping action of these new tongs prevents them from slipping down the tubing when being passed from one man to the next. Oilwell tubing tongs are well balanced, light in weight but powerful, making it easy to handle tubing with speed and convenience. They engage the tubing quickly and release instantly, because all parts are machined and carefully milled where close fitting is necessary. These new tubing tongs are made in 2-inch and 2½-inch sizes, and weigh 18½ pounds and 22 pounds respectively.

TRADE LITERATURE RECEIVED

The new pictorial catalog prepared by the National Equipment Corp., Milwaukee, Wis., illustrates a complete line of construction equipment.

The Fusion Welding Corp., Chicago, has published an eight-page engineering bulletin, No. 6, describing unbeveled plate welding and giving complete detailed instruction.

The Delta Star Electric Co., Chicago, has issued two new bulletins, one on standardized outdoor high-tension "unit type" vertical-break "MA-39" gang-operated switches and one on clamp type bus bar and conductor fittings, type "F."

The Safety Gas Main Stopper Co., Brooklyn, N. Y., is mailing a new catalog on gas distribution and street department supplies.

BLAW-KNOX GAS CLEANER

The Blaw-Knox Co., Pittsburgh, Pa., has acquired the sole manufacturing and sales rights of the Ac-me gas cleaner, formerly made under license agreement with the Empire Oil & Refining Co., by D. A. Sillers, Dallas, Tex. The name of this unit will be changed to the Blaw-Knox gas cleaner. The major underlying principles of the Ac-me gas cleaner were developed by engineers of the Empire Oil & Refining Co. and the Doherty Research Corp., or Bartlesville, Okla. Additional improvements were made by Mr. Sillers, superintendent of gas measurement for the Lone Star Gas Co., Dallas. An illustrated bulletin describing general operation and performance of the gas cleaner has been prepared by the Blaw-Knox Co.

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EQUIPMENT AND SUPPLIES

SURVEYING INSTRUMENT AIDS IN DEEPEST HOLE

By J. C. Ballagh

In the Gulf Coast area a 9⅝-inch hole was recently completed at a depth in excess of 8,200 feet. Engineers believe that this set a world's record for larger sized wells. The drillpipe for such operations has every opportunity to stray from the vertical. When it is realized that a length of fine drawn copper wire has about the same rigidity as 8,200 feet of drill pipe, the problem becomes evident. Too much weight on the bit tends to buckle the drillpipe and force it over against the walls of the hole at many places. The bit is held steadily in a centralized position by its own diameter but the angularity from the horizontal of its cutting face is easily altered if buckling action takes place in the pipe sections immediately above. Obstructions such as sidetracked tools, hard tilting formations, boulders, bits of steel, etc., tend to get the string from the vertical.

If these wanderings of the tools are unknown to the driller at the surface, the error goes on until real trouble is evidenced. A crooked well causes the tools to drag against the casing at the various bends and spirals. The added resistance to rotation, plus the tensile load, finally becomes greater than the ultimate strength of the drillpipe and twist-offs will occur. The crooked section of the hole must be abandoned, for the conditions causing the first twist-off continue to exist and would cause recurrence. Sidetracking several hundred or maybe 1,000 feet of hole is a waste of money and time and means additional delays until the oil sand is reached. Wise operators are realizing that correct underground surveying pays for itself many times over.

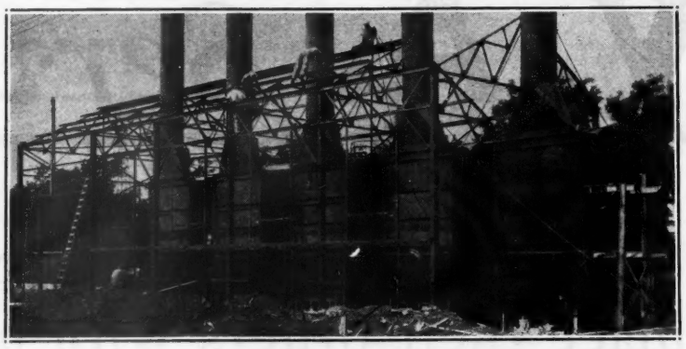
The course of this deep 9⅝-inch hole was guided by means of an ingenious mechanism located near the drill. This instrument, a product of the Rieber Instrument Corp., operates without interfering with drilling operations in any way. The manufacturers of this device give the following explanation which should be of interest to deep-hole operators

"The Rieber surveying instrument occupies a position just above the bit in a special nonmagnetic section of drill pipe. Declination and asimuth readings are taken and recorded on metal discs at any time wanted. Forty individual surveys may be made without pulling the tools and without interrupting drilling operations. When recording is desired, the tools are stopped abruptly, thus actuating a pendulum in the instrument. The inertia of the pendulum releases the mechanism and stamps out a permanent record of the well condition at that point. The course of the well is easily plotted from these discs by means of an indicator."

NEW TYPE BEARING DEVELOPED

S K F Industries, Inc., New York, has developed a new type of Felt-Seal ball bearing. A felt seal is provided as an integral part of the bearing, thus making it necessary for the machine manufacturer to provide only one housing enclosure. The outer and inner races as well as the balls in the S K F Felt-Seal bearing are made of high carbon, chrome-alloy steel hardened throughout. The bore and outside diameter are ground to international standard dimensions and tolerances, the same as the corresponding standard single row bearings. The width, however, is slightly greater than the standard dimension of a single row bearing in order to accommodate the felt seal. The tolerances on eccentricity of the outer and inner races are also international standard tolerances for single row ball bearings.

HAS GREAT CAPACITY AND USES LITTLE FLOOR SPACE



The Vogt Class M low type boiler, manufactured by the Henry Vogt Machine Co., Louisville, Ky., has been developed in answer to the demand for a small compact water-tube boiler that will provide maximum capacity in limited floor space and headroom. The principles of design in the Vogt Class M low type boiler are taken from the Vogt Class L boiler, which has been operating successfully for many years. The changes made to produce the low type boiler include a squatty arrangement of the three drums, with a consequent change in the method of baffling. It will be understood, therefore, where sufficient headroom is available the setting can be altered to suit.

When a small economical boiler is required for heating or power, the Vogt Class M low type boiler will meet the need, the manufacturers say. The setting and furnace design can be arranged to suit any method of firing using any kind of fuel. The maximum ratings recommended for this boiler depend on the operating pressure and vary from 100 per cent at 5 pounds to 200 per cent at pressures of 10 pounds and over.

This boiler is suitable for drilling, natural gasoline operations and other oil industry purposes. They are built in sizes from 80 to 430 horsepower and the smaller units are shipped assembled. The battery of five shown in the accompanying illustration is a natural gasoline plant installation in the north end of the Oklahoma City Field for the Phillips Petroleum Co. Each one has a capacity of 150 horsepower and as they are said to operate efficiently at 200 to 300 per cent rating, the great capacity of these "little steamers" is seen readily.

Advantages which the manufacturers say these Class M low type boilers possess include:

May be installed in battery or single setting.

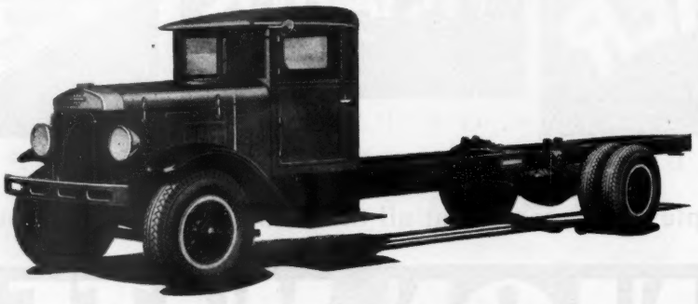
All tubes are easily accessible for cleaning or replacement.

The baffling is arranged to distribute evenly the gases over the entire tube surface, providing maximum efficiency with a minimum draft loss.

Occupy small floor space and are economical in operation.

"Automatic Arc Welding by the Electronic Tornado Process" is the title of a 40-page booklet published by the Lincoln Electric Co., Cleveland, Ohio, manufacturers of "Stable Arc" welders and "Linc-Weld" motors. It contains valuable information on automatic welding with the carbon arc.

INTERNATIONAL ANNOUNCES NEW HEAVY-DUTY TRUCKS



The Model W-1 and Model W-3 are recent additions to the International Harvester line of heavy-duty motor trucks. The rated capacities of these new units are respectively 2½ tons and 3½ tons. Both trucks are of the double reduction drive type and each is available in five wheelbases, the W-1 from 130 inches to 200 inches and the W-3 from 144 inches to 235 inches.

Attractiveness in design, finish and appearance have received serious consideration by International Harvester engineers in the development of these units, as evidenced by the lines of the three-piece hood with its controllable ventilators and the modernly equipped all-steel cab, a touch of brightness provided by the chromium-plated radiator cover and lamp rims, and attractive colors in which the trucks are finished. The frame, chassis and wheels are finished in red paints; the hood, cowl and cab in gray-green lacquer, and the fenders and running boards in black enamel.

The engines of the new Internationals are of the four-cylinder, valve-in-head type with overhead camshaft and valve mechanism. Each consists of five independently maintained subassemblies which simplify servicing and thus help keep the trucks on the jobs. All parts are easily accessible, making possible a quick check-over. In the accompanying illustration is shown a new model W-3 International.

TWO CONCERNS JOIN IN MAKING MULTI-V-DRIVE

To meet the demand for an efficient, economical and simple means of power transmission, the Worthington Pump & Machinery Corp., Harrison, N. J., has placed the Multi-V-Drive on the market. Developed in conjunction with the Goodyear Tire & Rubber Co., this drive consists of endless molded V-belts running in V-grooved sheaves. It combines a new long-life type of rubberized cord V-belt, impervious to dust and moisture, with an improved V-grooved sheave.

The Goodyear Emerald Cord belts used in the Worthington Multi-V-Drive combine high-power capacity, long flexing life, low stretch and accurate cross section. The load-carrying members are high-grade cotton cords arranged in parallel lines and concentrated about the neutral axis. The rubber is of the highest quality and each belt in the Multi-V-Drive takes an equal share of the transmitted load.

Each sheave is carefully grooved, machined and finished so that the grooves present a smooth surface on which the belts run. The wedging action between the belts and the grooves results in a slipless, powerful grip which compensates for, but differs from, initial belt tension in a flat belt drive.

The smooth-grooved construction of this drive, together with the fact that there is an exact mathematical relationship between the grooves and the molded shape of the V-belts, results in an effective conformity of belt to sheave which assures maximum power transmission efficiency. The combination gives a positive grip, without binding or backlash, which actually transmits about 99 per cent of the applied power at high speed ratios, over short centers without idlers.

There can be no sudden breakdowns, as each application is so engineered that, should one of the belts be ruptured, the remaining belts will carry the load until replacement is made. Among advantages claimed for this drive are high efficiency, long life, negligible maintenance, quiet operation, neatness, small floor space, constant speed, elimination of idlers, lubrication and belt dressings, higher speed ratios and freedom from breakdowns.

NEW TYPE MAGNETIC STARTER

A new 2,300-volt, full-voltage magnetic starter is being built by the Electric Controller & Manufacturing Co., Cleveland, Ohio. This starter, complete with overload relays and a self-contained potential transformer (to secure 220 volts for the control circuit) is intended for across-the-line starting of squirrel-cage and synchronous motors and may be used to control the primary of slipring motors. The starter is built for reversing, non-reversing and plugging applications. There are no boll cranks, toggle mechanisms or lever systems between the magnet armature and movable contact arm. The magnet armature, carrying the movable contact arm, is direct acting and is supported by only one large bearing pin and since the entire unit is totally oil-immersed, all working parts are always well lubricated and protected from dust and corrosion. This insures the equipment is ready for operation at any time, whether it is out of service for a few minutes or for several months.

Claude Bills of the Rapid Construction Co., Los Angeles, Calif., has left for a tour of Mid-Continent and eastern fields to inspect possible locations for his company's offices in connection with an expansion program.

A COMPLETE INSTALLATION

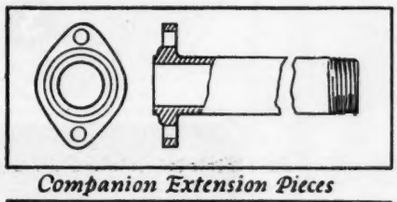
THERE is a time-worn saying that a chain is no stronger than the weakest link. Make sure that each link in every installation is equally strong by using Sterling Accessories with Sterling Sections.

■

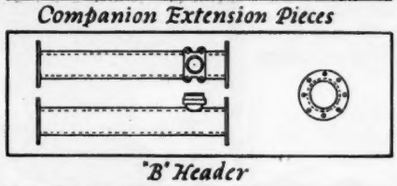
Sterling Sections and Accessories are designed to make a complete cast-iron condenser unit from above the water line to the final connection for the rundown line. This is illustrated by the typical installation shown, each piece being cast from ARCO METAL, the corrosion-resisting nichrome alloy cast iron.

■

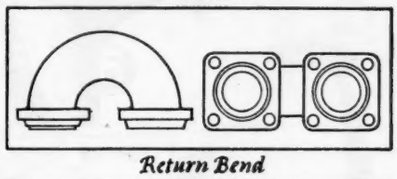
For your protection use Arco Metal all the way.



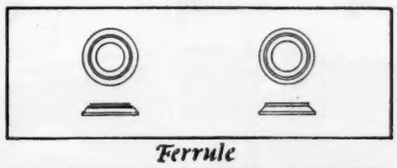
Companion Extension Pieces



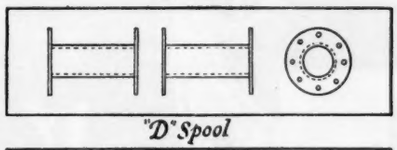
"B" Header



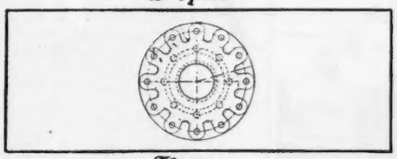
Return Bend



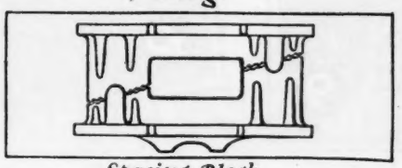
Ferrule



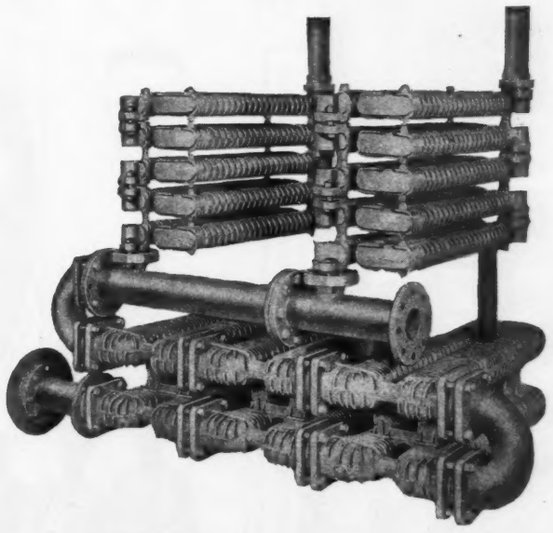
"D" Spool



Flange



Spacing Block



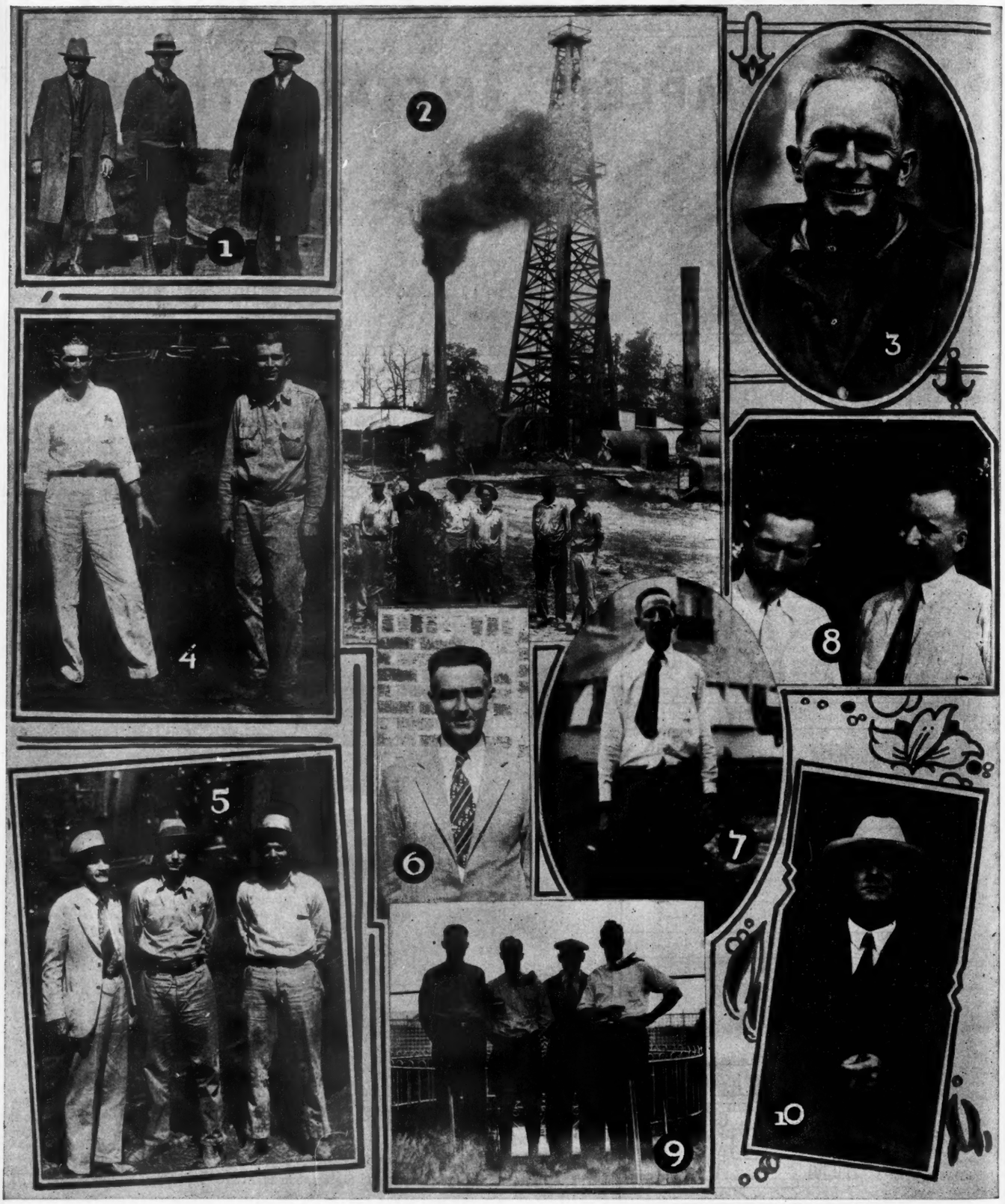
AMERICAN RADIATOR COMPANY

Industrial Division

Factory: Springfield, Ill.

40 West 40th Street, New York City 1214 Quinby Building, Los Angeles
816 So. Michigan Avenue, Chicago 935 Kennedy Building, Tulsa
4th and Townsend Streets, San Francisco

Snapshots of Men Active in Oil Industry



1—Left to right: Jim Keister, Lloyd Terry and Fred Manning, K. N. & T. Drilling Co. 2—Left to right: P. W. Ryals, driller; J. W. Maddow, Tom Wiley, H. W. Wiley, W. M. Poroth and E. L. Bilbo. 3—Carl Prather, West Virginia wildcatter who opened the Laketon Township area of the Muskegon oil field. 4—Bill Dunn, superintendent, Olsan Brothers, and Roy Reid, superintendent, Oil Well Corporation, El Dorado, Ark. 5—D. J. Johnston, president; J. H. Johnson, vice president; and G. H. Burnham, secretary-treasurer, Johnson Drilling Corporation, El Dorado, Ark. 6—H. T. Beckwith, consulting geologist, San Bernardino, Calif. 7—S. B. Plummer, Bureau of Economics Geology, State of Texas. 8—C. C. Pope, scout and land man, Dallas, Tex., and John H. Langston, chief scout, Dallas, Tex., Sun Oil Co. 9—J. A. Cleverley, N. M. Hutchinson, H. C. Van Houten and H. P. Hohenadel, Empire Oil & Gas Co., Oil Hill, Kans. 10—State Senator J. D. Parnell, Wichita Falls, Tex. Picture No. 1 courtesy advertising department, Lucey Products Corp.

Exchange
NATIONAL BANK
TRUST COMPANY
NATIONAL COMPANY
TULSA

We serve a giant industry that moves about

When the oil industry began to shape destiny in the Southwest there was the handicap of inadequate financing facilities. Oil financing was difficult to obtain in the old and established banking houses. So the Exchange National Bank of Tulsa was organized, to assist in and encourage development of an infant industry by making oil financing available. As a result the Exchange National has always been recognized as the Oil Bank of America.

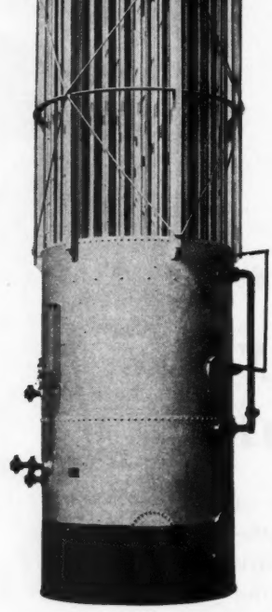
During the life of the Exchange National Bank the bit has discovered and developed more than a score of flush fields in Mid-Continent territory. Many of these fields made history in the industry. All of them commanded national attention. And although this bank cannot move about like the "big plays" in oil, regardless of shifting activity the Exchange National remains dominant, unchallenged . . . the banking instution through which flow major business transactions in all branches of the oil industry.

EXCHANGE BANKS OF TULSA

The Exchange National Bank | Exchange Trust Company | Exchange National Company

CREDIT SENTRY OF THE OIL FIELDS

ANNOUNCING
The TULSA TYPE *Feed Water Purifier and Condenser*



THE TULSA TYPE Feed Water Purifier and Condenser has been developed primarily to condense exhaust steam on drilling wells. Increased boiler capacity, muffling of engine exhausts, removal of steam clouds from derrick floor and reduction of boiler trouble has made possible faster drilling at lower costs.

Tulsa, Oklahoma
2020 South Union Street

TULSA
Boiler & Machinery Co.
TULSA OKLAHOMA

Oklahoma City, Oklahoma
443 Commerce Exch. Bldg.

NATURAL GASOLINE PLANTS TANKS REFINING EQUIPMENT

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w ..Rig.
Shasta Oil Co.'s No. 1 Romwalt, SW NW Sec. 11-2-10w ..Drlg. 1,050 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w ....Shut down 1,450 ft.
Green et al's No. 1 Wilson, C NE SW Sec. 14-1-12w ....Shut down 4,055 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w ..... Wilcox 6,132 ft.; drlg. 6,150 ft.; show oil.
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w ..... Shut down 5,580 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ....Shut down 100 ft.
J. M. Henry et al's No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.

GRANT COUNTY

Bu-Vi-Bar and Amerada's No. 1 Hurst, C SW Sec. 25-26-5W ..... Rig.
Cowden et al's No. 2 Vollmer, CEL NE SW Sec. 22-25-4w. Shut down 5,640 ft.

GARVIN COUNTY

McMinn et al's No. 1 Carson, NE NW Sec. 5-3-4w ..... Rig.
Nelson et al's No. 1 Strickland, NE SW Sec. 10-4-3w ....Shut down 2,880 ft.

GREER COUNTY

I. T. I. O. et al's No. 1 fee, C SW NE Sec. 17-6-24w ....Shut down 2,290 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w ..... Drlg. 2,140 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w ..... Fishing 5,570 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w ..... Abandoned 8,583 ft.

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21 ..... Location.
Mid-Western's No. 1 Polster, C NE SE Sec. 33-10-22 ....Shut down 3,200 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e ...Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 ..... Drlg. 1,475 ft.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 ..... 1,000,000 ft. gas 2,284 ft.; drlg. 4,170 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 ..... Drlg. 4,120 ft.

KAY COUNTY

Alco Royalty Co.'s No. 1 Wolf, SE SW SE Sec. 34-26-2w..Drlg. 3,090 ft.
Blankenship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 ..... Drlg. 2,859 ft.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w ..... Rig.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w ..... Shut down 6,015 ft.

KIOWA COUNTY

Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w. Shut down 1,525 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24 ..Drlg. 5,865 ft.

LATTIMER COUNTY

Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 ..... Shut down 1,450 ft
Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e ..... Shut down 3,530 ft.

LINCOLN COUNTY

J. J. Deaner et al's No. 1 Knox, NE NW Sec. 28-17-2....Drlg. 2,980 ft.
Atlantic Oil Prod. Co.'s No. 1 Parker, SE NW Sec. 5-14-6 ..... Drlg. 1,375 ft.
Magnolia Pet. Co.'s No. 1 Winship, NE SW Sec. 2-13-4 ..Drlg. 3,725 ft.
Tom Slick Oil Co.'s No. 1 Hammer, SE NW NW Sec. 35-16-2 ..... Drlg. 5,595 ft.

LOGAN COUNTY

Slick & Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w .... Rig.
Prairie and Slick's No. 1 Morgan, NW NE Sec. 33-16-1w ..... Drlg. 4,936 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w. Fishing 1,150 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MURRAY COUNTY

Chieftain Royalty Corp.'s No. 1 Hendrix, SW SE NW Sec. 27-2-2 ..... Fishing 1,920 ft.

MUSKOGEE COUNTY

Becker & Hutchinson's No. 1 May, SE NE, Sec. 16-12-19.. Rig.
Mid-Western Oil Co.'s No. 1 Lacey, NW NE, Sec. 31-12-19 Drlg. 510 ft.
H. E. Williams' No. 1 Robbins, NW SW NW Sec. 13-15-18 ..... Abandoned 1,235 ft.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ...Shut down 1,011 ft

NOBLE COUNTY

Weaver & Craigin's No. 1 Frederick, C SW NE Sec. 4-24-1w ..... Drlg. 2,085 ft.
Gypsy Oil Co.'s No. 1 Bergstrom, SE NE Sec. 28-22-1w.. Drlg. 5,462 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 ..... Drlg. 3,287 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 ..... Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10.. Shut down 3,661 ft

OKLAHOMA COUNTY

Cromwell-Franklin's No. 1 Lincoln Park, SW cor. Sec. 12-12-3w ..... Drlg. 2,085 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... Drlg. 3,950 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w ..... Drlg. 5,686 ft.
Prairie and Slick's No. 1 Dill, SE NW Sec. 17-13-3w .... Drlg. 6,676 ft.; show gas.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w ..... Shut down 6,217 ft
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w ..... Fishing 6,532 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w ..... Drlg. 6,871 ft.
Ryan Consolidated's No. 1 Lawton, NE NW Sec. 3-11-2w.. Drlg. 6,810 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w ..... T. D. 6,971 ft.; water; plugging back 3,250 ft. to test.

OSAGE COUNTY

Western American Oil Co.'s No. 1, NW SE Sec. 28-23-6 ..Drlg. 1,500 ft.

PAWNEE COUNTY

L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 ....Drlg. 1,050 ft.
Flynn & Morgan's No. 1 Jones, SW NE Sec. 22-20-5 ....Drlg. 1,100 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ....Rig.

PITTSBURG COUNTY

Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e ..... Fishing 3,975 ft.

POTTAWATOMIE COUNTY

The Texas Company's No. 1 Knight, SW SE Sec. 3-8-3 ..Rig on ground.

ROGER MILLS COUNTY

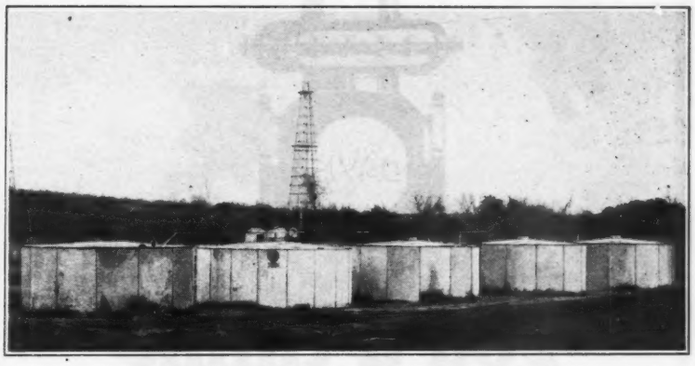
Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ..Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 2,905 ft.

SEMINOLE COUNTY

Pure Oil Co.'s No. 1 Shaffer Ashby, SE NE Sec. 22-7-5.. Drlg. 3,880 ft.
T. Adkins et al's No. 1 McGilbray, SE NE Sec. 4-8-8 ... Drlg. 4,000 ft.
Magnolia and Twin State Oil Co.'s No. 1 Harns, SW NE NE Sec. 8-5-6 ..... Wilcox 3,507-13 ft.; water; shut down.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 ..... Location.

USE MALONEY

Five 500-Bbl. Low Type Maloneys used by T. B. Slick in the West Extension at St. Louis, Okla.



VAPOR-PRESSURE CONSTRUCTION

—Save Your Oil!

MALONEY Vapor-Pressure construction includes an aluminum coating to prevent excessive temperature changes, and valves set at 16-oz. pressure and 2-oz. vacuum to restrict the movement of vapors. These tanks are 12-gauge or heavier, with half inch bolts and heavy angle ties and reinforcements. They make you money by saving all your oil. They save you money by standing up through long service.

Maloney A. P. I. Bolted Steel Tanks conform to A. P. I. dimensional standards and carry the official A. P. I. monogram.

"Alone in Quality"

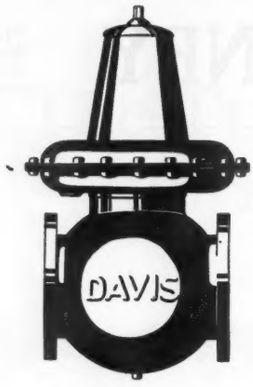
MALONEY TANK MFG. CO.
Tulsa, Okla., U.S.A.

Distributers at All Principal Petroleum Points

MADE OF KEYSTONE AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY ALONE



You'd think it had a "complex"

The Davis Supersensitive Relief Valve is so sensitive you'd think it had an inferiority complex. Yet it is not complex at all, but a very simple and efficient mechanism. And it has just the opposite of inferiority, being very superior in the recovery of tank vapors.

Many prominent operators have adopted them as standard equipment in vapor recovery systems. Exclusive features of design insure smooth, "foolproof" action. Made for use in exposed positions.

Davis Automatic Valve Specialties are described in detail in Catalog 11. We'll be glad to send you a copy.

DAVIS REGULATOR COMPANY
2543 South Washtenaw Avenue
CHICAGO, ILLINOIS

WESTCOTT & GREIS, Inc.
Sales Engineer
TULSA LOS ANGELES DALLAS

Automatic valve makers for over fifty years

DAVIS VALVE SPECIALTIES

OGJ 7-24 Gray

WASHITA COUNTY
Petroleum Holdings, Inc.'s No. 1 Music, NW cor. Sec. 10-9-20w ..... Shut down 280 ft.

WOODS COUNTY
Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w ..... Drlg. 6,189 ft.
Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Shut down 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w ..... Drlg. 7,023 ft.; show oil

WOODWARD COUNTY
Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w ..... Shut down 1,387 ft.
Prairie Oil & Gas et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w ..... Drlg. 7,420 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w ..... Shut down 1,910 ft.

OKLAHOMA PANHANDLE
CIMARRON COUNTY
Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5 ..... Drlg. 3,290 ft.

TEXAS COUNTY
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e ..... Spudded; shut down.

SOUTHERN OKLAHOMA
ATOKA COUNTY
Bryant-Croxton's No. 1 Mason, NW SE NW Sec. 4-1s-14.. Shut down 1,850 ft.
Brookshire's No. 1 Guinn, NW cor. Sec. 18-3s-10 ..... Shut down 100 ft.

BRYAN COUNTY
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e .. Drlg. 400 ft.
Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 ..... Shut down; 6-in. csg. 265 ft.

CARTER COUNTY
Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Shut down 2,590 ft.

CHOCTAW COUNTY
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6s-19e ..... Shut down 1,346 ft.

COMANCHE COUNTY
Pelwin Oil Co.'s No. 1 Tafepirdy, C NW NE NE Sec. 5-1s-9w ..... Drlg. 1,826 ft.

COTTON COUNTY
H. J. Dillard's No. 1 McMillan, SE NW Sec. 2-4s-13w.... Location.

LOVE COUNTY
Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w .. Shut down 3,130 ft.
Gilcrease Oil's No. 1 Burkhart, NE NW Sec. 13-6s-1 .... Rig.

MARSHALL COUNTY
Pace et al's No. 1 Hicks, SW NW Sec. 8-6s-7 ..... Drlg. 390 ft.
Walker et al's No. 1 Parks, NW NE NW Sec. 5-5s-5 .... Drlg. 650 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6 .... Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e .... Drlg. 370 ft.

McCURTAIN COUNTY
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 ..... Shut down 2,287 ft.

STEPHENS COUNTY
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n .... Shut down 1,060 ft.
Wirt Franklin Petroleum Corp.'s No. 1 McPhail, NW SE Sec. 1-2s-7w ..... Total depth 4,529 ft.; to test.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 44)

DOUGLAS COUNTY
Steinbuckel's No. 1 Unknown, SW NE NW Sec. 34-14-21.. Shut down 1,100 ft.
Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17 .. Shut down 1,800 ft.

EDWARDS COUNTY
Dixie and Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w ..... Water 4,647-90 ft.; shut down 4-100 ft.; plugging back to 4,453-92 ft.; 8,000,000 ft. gas; comp.

ELLIS COUNTY
Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w ..... Fishing 3,140 ft.
Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w. Drlg. 3,552 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w ..... Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ..... Shut down 3,665 ft.

ELK COUNTY
Croft & Frazier's No. 1 Keys, SE NE Sec. 26-31-10 .... Rig.

ELLSWORTH COUNTY
Slick et al's No. 1 Unknown, NW cor. Sec. 25-17-10w .... Shut down 50 ft.

FORD COUNTY
McNabb et al's No. 1 Fowler, C SE Sec. 26-27-22w .... Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w .... Shut down 3,575 ft.

GOVE COUNTY
Varelius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w ..... Drlg. 1,530 ft.

GRAHAM COUNTY
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w. Shut down 4,370 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w.. Drlg. 4,370 ft.

GRANT COUNTY
McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w.. Shut down 50 ft.

GREENWOOD COUNTY
Staats et al's No. 1 Swan, NE NW Sec. 3-25-12 ..... Rig.
Mid-Continent Pet. Corp.'s No. 1 Griss, NW SW Sec. 33-25-13 ..... Drlg. 900 ft.
Harwood Oil Co.'s No. 1 Log, SW NE Sec. 20-25-10 ..... Drlg. 430 ft.
Mallory's No. 1 Denchfield, SE NW Sec. 12-27-9 ..... Drlg. 1,810 ft.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 ..... Shut down 50 ft.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12.. Shut down 1,836 ft.

HARPER COUNTY
Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w ..... Shut down 1,830 ft.

KIOWA COUNTY
Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w .... Drlg. 3,130 ft.
McKenna et al's No. 1 Ralson, C NE Sec. 14-28-20w .... Rig.

LYONS COUNTY
Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 ..... Drlg. 910 ft.

MARION COUNTY
Magnolia Pet. Co.'s No. 1 Davis, SE NW Sec. 18-21-2 .... Drlg. 360 ft.
Dixie and Arkansas Fuel's No. 1 Hacker, NW NE Sec. 6-17-1 ..... Spud; shut down.
Empire Oil & Ref. Co.'s No. 1 Hiebert, SE SW SE Sec. 20-20-2 ..... Drlg. 2,690 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 .... Rig.

MARSHALL COUNTY
Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 ..... Shut down 1,000 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 ..... Shut down 50 ft.

McPHERSON COUNTY
Simmons & Canary's No. 1 Bishop, NW SW Sec. 15-18-1w ..... Drlg. 2,802 ft.
Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w ..... Rig.

MIAMI COUNTY
Clark's No. 1 Vaughn, SE SW Sec. 28-17-22w ..... Drlg. 1,200 ft.

MORTON COUNTY
Argus Prod. Co.'s No. 1 Morgan, C NW Sec. 8-33-39w.... Rig on ground.
McNabb et al's No. 1 Rickart, C SE Sec. 5-35-39w ..... R.U.S.T. 2,546 ft.
Argus Prod. Co.'s No. 1 Mangels, C NW Sec. 4-34-39w... Comp. 2,607-2,851 ft.; 8,000,000 ft. gas.
Argus Prod. Co.'s No. 1 Tillet, C SW Sec. 21-34-39w ..... Drlg. 585 ft.
Argus Prod. Co.'s No. 1 Sullivan, C NW Sec. 29-34-39w ... Rig.
Argus Prod. Co.'s No. 1 Burton, C SE Sec. 11-33-40w ..... Drlg. 1,645 ft.

Argus Prod. Co.'s No. 1 Mangels, C SE Sec. 4-33-39w ....R.U.S.T. 2,527 ft.
Argus Prod. Co.'s No. 1 Morgan, C SW Sec. 6-33-39w .... Rig. 2,475 ft.
Argus Prod. Co.'s No. 1 Mangels, C SW Sec. 19-33-39w ...Shut down 2,908 ft.
Argus Prod. Co.'s No. 1 Mangels, C NE Sec. 20-33-39w ...Drlg. 2,440 ft.
Argus Prod. Co.'s No. 2 Haywood, C NW Sec. 31-33-39w ..Shut down 2,830 ft.
Argus Prod. Co.'s No. 1 Garner, C SE Sec. 18-33-39w ....Drlg. 1,670 ft.
Argus Prod. Co.'s No. 1 Dreibelbis, C NE Sec. 9-34-39w ..Comp. 2,568-2,843 ft.; 3,000,000 ft. gas; T. D. 2,900 ft.
Argus Prod. Co.'s No. 1 Watson, C NE Sec. 27-34-40w ....Drlg. 1,790 ft.
Argus Prod. Co.'s No. 1 Rolla State Bank, C NW Sec. 8-34-39w .....Comp. 2,601-2,792 ft.; 3,000,000 ft. gas; T. D. 2,852 ft.
Argus Prod. Co.'s No. 1 Hayward, C SW Sec. 9-34-39w ...R.U.S.T. 2,600 ft.
Argus Prod. Co.'s No. 1 Thompson, C NW Sec. 18-34-39w..Drlg. 2,388 ft.
Argus Prod. Co.'s No. 1 Darth, C NE Sec. 20-34-39w .....Drlg. 2,500 ft.
Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-24-43w .....Drlg. 1,720 ft.; gas at 1,200-10 ft. and at 1,350 ft.

MORRIS COUNTY

Henderson et al's No. 1 Selsman, SW SE Sec. 24-16-9 ..Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6 .....Drlg. 2,420 ft.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ....Drlg. 410 ft.

PAWNEE COUNTY

Skelly Oil Co.'s No. 1 Milhouse, C SE Sec. 24-23-17w ....Fishing 4,605 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w .....Shut down 4,005 ft.

RENO COUNTY

Shell Pet. Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w....Rig.
E. L. Study and H. L. Turner's No. 1 Haury, NE SW Sec. 1-23-4w .....Drlg. 1,885 ft.
Phillips Pet. Co. and Tom Palmer's No. 1 Harsch, NE SE Sec. 14-26-5w .....Drlg. 2,960 ft.
United Pet. Co.'s No. 1 Houston, NW cor. Sec. 4-22-10w..Drlg. 940 ft.
C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w .....Drlg. 3,600 ft.

RICE COUNTY

Gypsy Oil Co.'s No. 1 Koch, SE NE NW Sec. 35-20-9w....Drlg. 1,125 ft.
Hershey Golden & Skelly's No. 1 Brandenstein, Sec. 10-19-10w .....Rig on ground.
McPherson and Shell's No. 1 Jennings, NE SW NW Sec. 29-18-6w .....Drlg. 2,978 ft.
Miller & Brown's No. 1 Schartz, Sec. 14-20-10w .....Drlg. 2,750 ft.
Hoffner, Lee & Shell's No. 1 Slad Farm Corp., C SW Sec. 33-19-6w .....Drlg. 2,285 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ....Drlg. 2,440 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w .....Shut down 3,498 ft.
McCulloch et al's No. 1 Williams, C[illegible] .....Shut down 3,809 ft.

ROOKS COUNTY

A. H. Kruger's No. 1 Steis, NW SE[illegible] .....Abandoned 570 ft.
Streater-Stearn's No. 1 Conger, SE NW NE Sec. 16-10-16w .....Drlg. 210 ft.

RUSH COUNTY

Prairie et al's No. 1 Lecker, NW SW[illegible] ..Drlg. 417 ft.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w ..Location.
McPherson O. & G. Co.'s No. 1 Brack, C NW Sec. 24-17-16w .....Drlg. 2,415 ft.
Syndicate Oil Co.'s No. 1 Mohr, C SW Sec. 2-18-16w ....Drlg. 2,300 ft.
Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w. .....Total depth 3,606 ft.; shut down.

RUSSELL COUNTY

Streater & Stearns' No. 1 Mitchell, SE cor. Sec. 6-15-[illegible]w..Drlg. 485 ft.
Empire O. & R. Co.'s No. 1 Herbel, NW NE SW Sec. 26-14-14w .....Drlg. 1,010 ft.
Slick et al's No. 1 Berrick, SE SW Sec. 23-15-13w .....Drlg. 2,808 ft.
Empire and Prairie's No. 2 Ochs, SE NE Sec. 23-15-14w..Drlg. 2,820 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w .....Shut down 774 ft.
Gilbreath et al's No. 1 Bratton, C[illegible] .....Shut down 1,010 ft.

SEDGWICK COUNTY

Newman et al's No. 1 Bawly, SE[illegible] ..Drlg. 2,163 ft.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w .....Shut down 975 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis[illegible] Sec. 20-13-4w .....Shut down 1,725 ft.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherma[illegible] 10-15 .....Shut down 985 ft.

STAFFORD COUNTY

Boucher Oil's No. 1 Christenson, N[illegible] ..Shut down 2,735-68 ft.; water.
Boucher Oil's No. 1 Groves, NE cor. Sec. 9-22-11w .....Drlg. 2,117 ft.
Midwest's No. 36 Richardson, SE cor. S[illegible] ..Fishing 2,838 ft.

STEVENS COUNTY

McNabb and Mid-Kansas' No. 1 Rinehart, C NW Sec. 23-32-39w .....Rig.
Barrington et al's No. 1 Creamer, C NW Sec. 2-35-39w..Drlg. 1,405 ft.
Argus Prod. Co.'s No. 1 Irwin, C SE Sec. 10-35-37w .....Rig.
Argus Prod. Co.'s No. 1 Ratcliff, C SE Sec. 8-33-37w ....R.U.S.T. 2,492 ft.
McNabb et al's No. 1 Porter, Sec. 4-31-37w .....Spudding.
Argus Prod. Co.'s No. 1 Shaffer, C SE Sec. 6-35-38w ....Drlg. 2,268 ft.
Argus Prod. Co.'s No. 1 Stone, C NE Sec. 3-33-39w .....Drlg. 2,505 ft.
Agate Oil Co.'s No. 1 Gregory, NW SE Sec. 19-33-38w ....Drlg. 2,310 ft.
Argus Prod. Co.'s No. 1 Libon, C NE Sec. 2-34-39w .....Drlg. 1,650 ft.
Argus Prod. Co.'s No. 1 Roach, C NE Sec. 34-32-38w ....Comp. 2,552-2,886 ft.; 5,000,000 ft. gas.
Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-39w .....Fishing 1,590 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w .....Shut down 1,600 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-33-2 ....Drlg. 1,720 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w ....Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 ....Drlg. 510 ft.

WOODSON COUNTY

Sheedy et al's No. 1 Reed, SW SE SW Sec. 26-23-14 ....Shut down 1,595 ft.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w .....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w ....U. R. 5-in. csg.; T. D. 4,265 ft

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW NW Sec. 28-1n-22w .....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w..Shut down 3,250 ft.

PHELPS COUNTY

Trees Oil's No. 1 Bergan, Sec. 22-6-19w .....Rig on ground.

RICHARDSON COUNTY

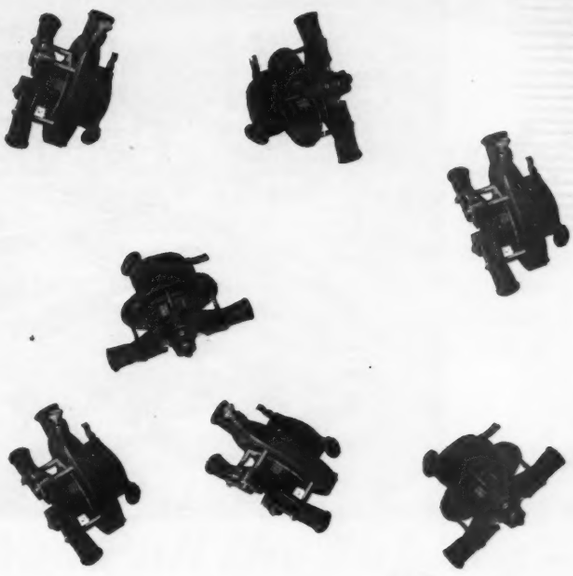
Norton et al's No. 1 Albin, NE cor. Sec. 26-1-14 .....Miss. lime 2,200 ft.; landing 8-in casing.

ROCK COUNTY

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w .....Drlg. 900 ft.

WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. [illegible] SE one-half Sec. 2-1n-11w .....Shut down 555 ft.



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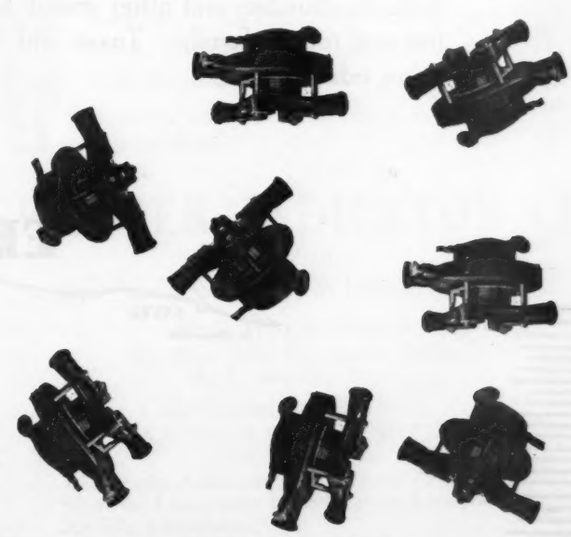

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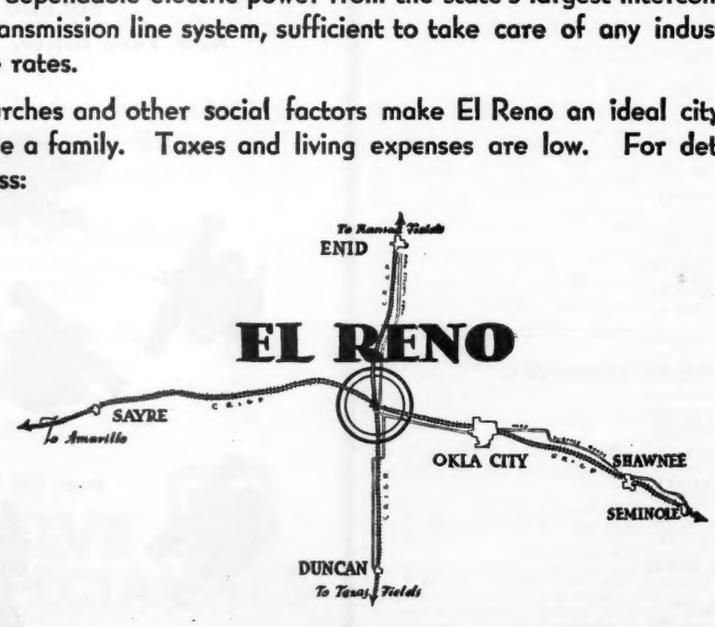

CHAMBER of COMMERCE, EL RENO, OKLA.

INDUSTRY HAS BETTER GRASP ON SITUATION THAN ONE YEAR AGO

By James McIntyre

Up to the end of May the total production of crude oil in the United States for 12 months was 992,814,405 bbls. The production for May was 80,365,804 bbls. as against 83,617,945 bbls. in the same month last year. This indicated a decrease of 104,908 bbls. a day in the production in May, 1930, as compared with the average for the same month in 1929. The decrease was occasioned solely by the efforts of oil producers to maintain production at a level with demand. The known potential production in May this year was vastly in excess of the estimated potential a year before, but the industry has a better grasp on the situation this year than last and by splendid co-operation in several large producing states kept much of their production in its natural storehouse, while last year a great overproduction was permitted beginning in May and continuing through the summer.

Following are the figures showing production by pools in the fields between the Mississippi River and California, and a summary of all fields:

SUMMARY BY PRODUCING DIVISIONS

Crude Oil Production in the United States in May

	Daily av. (bbls.)	Month (bbls.)
Oklahoma	664,113	20,587,503
California	614,337	19,044,444
Texas	845,615	26,214,068
Kansas	128,335	3,978,385
Arkansas	53,545	1,659,895
Louisiana	61,751	1,914,290
Montana	9,812	304,172
Wyoming	50,493	1,565,283
Colorado	4,425	137,175
New Mexico	18,019	558,589
Eastern Field	142,000	4,402,000
Total May	2,592,445	80,365,804
Total April	2,564,897	76,946,896
Difference	27,548	3,418,908

MID-CONTINENT FIELD

Daily Average and Monthly Production in May

Kansas	128,335	3,978,385
Oklahoma	664,113	19,044,444
North Texas	101,721	3,153,356
Central Texas	39,296	1,218,176
West Texas	311,668	9,661,721
East Central Texas	38,532	1,194,501
Panhandle Texas	106,365	3,297,315
North Louisiana	39,779	1,233,149
Arkansas	53,545	1,659,895
Total May	1,483,354	44,440,937
Total April	1,461,198	43,835,946
Difference	22,156	604,991

GULF COAST AND SOUTHWEST TEXAS

Daily Average and Monthly Production in May

Gulf Coast	199,411	6,181,740
Southwest Texas	70,593	2,188,405
Total May	270,004	8,370,145
Total April	262,446	7,873,387
Difference	7,558	496,758

OKLAHOMA

Daily Average and Monthly Production in May

Washington	4,987	154,597
Nowata	5,578	172,918
Rogers	2,128	65,968
Osage and eastern Kay Counties:		
Burbank	16,256	503,936
Osage, outside Burbank	22,915	710,365
Total	39,171	1,214,301
Tulsa and Wagoner Counties:		
Bird Creek, Owasso, etc.	3,194	99,014
Red Fork, Sand Springs, Turkey Mt., Bruner	1,116	34,596
Bixby, Leonard	826	25,606
Broken Arrow, Coweta	926	28,706
Total	6,062	187,922
Tulsa, Okmulgee and Muskogee Counties:		
Okmulgee and Beggs	2,134	66,154
Mounds	1,442	44,702
Bald Hill and Haskell	2,151	66,681
Morris, Boynton, Cole	1,751	54,281
Total	7,478	231,818
Okmulgee, Okfuskee, Seminole, Hughes and Pottawatomie Counties:		
Seminole City	18,804	582,924
East Seminole	3,503	108,593
Bowlegs	18,140	562,340
Little River	52,103	1,615,193
Earlsboro	76,084	2,358,604
Searight	11,504	356,624
Mission	11,910	369,210
County—		
Carr City	9,574	296,794
Maud	5,054	156,674
Total Seminole Field	206,676	6,406,956
Allen	21,343	661,633
Konawa	15,973	495,163
Asher	3,251	100,781
Pearson-St. Louis	34,180	1,059,580
Sasakwa	8,969	278,039
Bebee	3,308	102,548
Henryetta, Deaner-Lyons, etc.	6,871	213,001
Wewoka	3,692	114,452
Cromwell	7,512	232,872
Papoose-Glicrease	2,798	86,738
Jarvis-Holm	310	9,610
Weleetka	963	29,853
Wetumka	38	1,178
Yeager	679	21,049
Miscellaneous	572	17,732
Total	317,135	9,831,185
Creek and Tulsa Counties:		
Glen Pool, Jenks, Kiefer	6,605	204,755
Sapulpa and Fisher	568	17,608
Cushing, Shamrock	13,755	426,405
Bristow, Kelleyville and Depew	13,512	418,872
Pickett Prairie and North Bristow	1,603	49,693
Eastern Bristow or Slick	4,880	151,280
Total	40,923	1,268,613
Pawnee County:		
Cleveland	2,971	92,101
Keystone	1,902	58,962
Jennings	2,136	66,216
Otoe	562	17,422
Ralston-Masham	239	7,409
Total	7,810	242,110
Payne County:		
Yale, Quay, Ingalls	3,930	121,830
North Cushing	3,766	116,746
South Cushing	1,215	37,665
Mehan-Ripley	2,167	67,177
Total	11,078	343,418
Oklahoma County:		
Oklahoma City	124,951	3,873,481
Lincoln County:		
Stroud	943	29,233
Davenport	1,208	37,448
Kendrick	207	6,417
Chandler	4,798	148,738
Total	7,156	221,836
Kay, Grant and Noble Counties:		
Blackwell	1,201	37,231
Vernon	745	23,095
Otstot	861	26,691
Deer Creek	710	22,010
Ponca City	561	17,391
Mervine	264	8,184
Braman	3,369	104,439
Hubbard	1,548	47,988
Thomas	676	20,956
Garrett	12	372
Tonkawa	7,351	227,881
Billings	117	3,627
Miscellaneous	1,502	46,562
Total	18,917	586,427
Garfield County:		
Garber	4,349	134,819
Logan County:		
Lovell	320	9,920
Marshall	5,306	164,486
Total	5,626	174,406
Carter County:		
Healdton	12,183	377,673
Hewitt	7,356	228,036
Graham	2,601	80,631
Brock	542	16,802
Fox	2,115	65,565
Sholom Alechem	13,126	406,906
Total	37,923	1,175,613
Stephens and Cotton Counties:		
Loco-Milroy	1,531	47,461
Comanche	1,237	38,347
Duncan	4,413	136,803
Walters	3,088	95,728
Kilgore	324	10,044
Total	10,593	328,383
Jefferson County:		
Hambro, etc.	2,969	92,039
2s-6w	158	4,898
Total	3,127	96,937
Caddo County:		
Cement	3,130	97,030
Garvin County:		
Robberson	1,863	57,753
Grady County:		
Knox	2,956	91,636

(Continued on Page 116)

The Old Way Costs You *Double*

The old way of hunting for tubing leaks has gone into the discard. No longer is it necessary to pull the tubing slowly, wipe each joint and examine every collar in the search for a tubing leak.

The New Way is to Locate the Leak Before You Pull the Tubing—

The GRANGER TUBING LEAK INDICATOR will locate the leak before the tubing is pulled, thereby saving many hours and often several days of labor and lost production.

On the right is shown a cross section view of the Indicator. The slips on the upper end together with the safety valve in the bottom end insure the tool against moving up the tubing where a gassy condition exists. The bottom cups are beveled and the cups laced with wire so they will pass all joints freely. When the Indicator reaches the leak it remains there because the fluid between the leak and the standing valve will not compress. The operator knows when the Indicator has reached the leak because it shuts it off and the tubing will fill and remain full.

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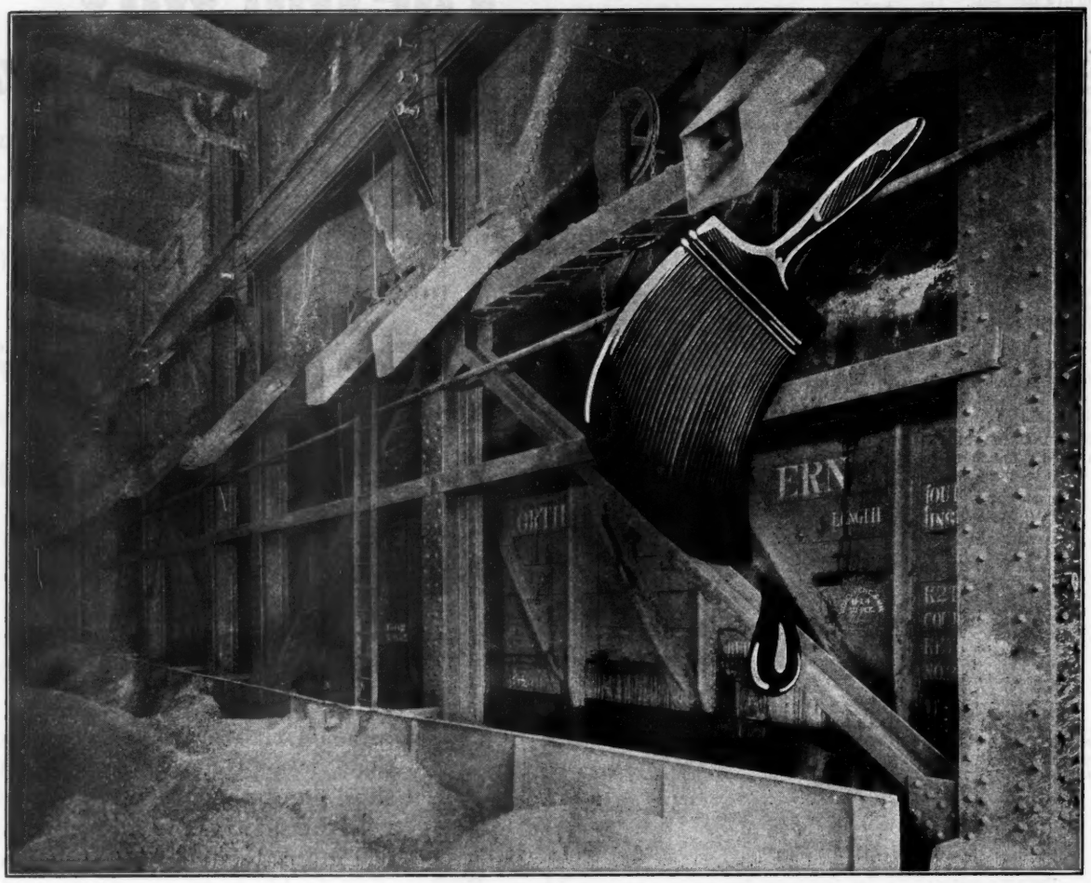

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NITROSE

ROCKY MOUNTAIN AREA

(Continued from Page 54)

lime and is believed to be about through the Madison lime. The sands in the Deadwood formation are the next and final objectives. The same company's No. 11 Middy, NE NE, Section 23-35-79, Midway Dome, is drilling at 4,808 feet in black shale with the second Wall Creek at around 5,100 feet as the first objective. Bessemer Oil Co.'s No. 6, NE, Section 18-33-83, Poison Spider, is drilling at 500 feet. Wind River Oil & Gas Co.'s No. 1 DeLong, NE SE, Section 9-38-78, west of Teapot Dome, is bottomed below 3,200 feet and underreaming the 6⅝-inch to shut off water from the first Wall Creek. Chicago Oil Co.'s No. 3, SW, Section 1-33-83, Poison Spider, is lowering casing to 3,155 feet to shut off water in the Amsden. This is a test to the Madison lime. Casper Producing Co.'s No. 1 State, Section 36-36-81, Segment Basin, is drilling at 300 feet. A Casper syndicate, in which the Jupiter Oil Co. and the Empire State Oil Co. are interested, is building derrick for its No. 1 Ogden, SW, Section 24-36-85, Powder River Dome. This structure had some gas in the Frontier in wells drilled in the past, but lowers horizons were not tested. This well will go to the Dakota, expected at around 2,500 feet.

Weston County

Lambie Oil Co.'s No. 1 Bock, SE SW NE, Section 14-46-64, in the Osage Field, which last week was reported as having put 160 bbls. into the tank in seven hours from sand at 1,670-79 feet, is one of the best completions in that area since the Jones gusher was brought in several months ago. It turned 3,400 bbls. into the pipe line last week and is holding steady at around 400 bbls. a day. It is one-fourth of a mile to the northwest of the Jones well. The Wesco Oil Co.'s No. 6 Fee, NE SE, Section 13-46-64, is drilling at 1,000 feet, and Dornacher and others' No. 2, SE SE, Section 12-46-64, is running 8¼-inch casing at 515 feet. Lambie Oil Co.'s No. 2 Bock, CSL SW NE, Section 14-46-64, is rigging up. Osage Trust Co.'s No. 4, NE NW SE, Section 14-46-64, is rigging, and its No. 5, NW NE SE, Section 14, is a location. Its No. 6, CNL NW SE, Section 14, also is a location. Curtis & Straitliff's No. 2 Updike, SE cor. NW, Section 14-46-64, is drilling at 1,450 feet. Osage-Wyoming Oil Co.'s No. 1 Witzell, NE NW, Section 30-46-64, is drilling at 1,400 feet, and M. K. Mouser's No. 1 Bock, NW cor., Section 2-46-64, is drilling at 1,000 feet. Tom Don's No. 4, NW SE, Section 20-46-63, is drilling at 1,035 feet, and the Oregon-Wyoming Oil Co.'s No. 1, SE cor. NE, Section 25-46-64, is running casing at 1,427 feet with oil and gas showing in the hole. James McCullough's No. 2 Logan McCullough, CNL NE NE, Section 23-46-64, is a location, and Carl Cundy's No. 1, NW NE, Section 31-46-63, is ready to spud.

Carbon County

Producers & Refiners Corp.'s No. 4, Section 7-26-89, is building rig, and its No. 16, Section 25-26-87, Ferris Dome, is bottomed at 2,900 feet and redrilling at 2,072 feet. Same company's No. 3, SE NW, Section 2-19-88, Hatfield Dome, is drilling at 4,066 feet in sandy shale. Kanawha Oil & Gas Co.'s No. 1, NE, Section 34-23-79, Allen's Lake, is reported abandoned after being unable to recover tools. It was below 2,000 feet. Midwest Refining Co.'s No. 31 Eades, SW SE, Section 1-18-78, Dutton Creek, is drilling at 4,795 feet in dark shale with 6⅝-inch at 4,779 feet.

Niobrara County

Argo Oil Co.'s No. 7 Wehopeso, SW NW, Section 19-39-60, Mule Creek, a deep test, has succeeded in straightening up hole and is drilling at 2,780 feet in the Tensleep.

Converse County

Weisman Big Muddy Oil Co.'s No. 1, SW SE, Section 6-33-76, east end of the Big Muddy Field, topped the Shannon sand at 1,165 feet where considerable gas was encountered and oil rose several hundred feet in the hole. The 12½-inch is being lowered to the top of the sand before drilling in. John Ackard's No. 2, SW NE, Section 28-31-69, McKinley Switch, is reported drilling at 3,479 feet in the Madison lime. The hole went through nearly 1,500 feet of what was considered granite, but which later was claimed to be granite wash.

Lincoln County

Mountain States Oil Corp.'s No. 1 State, NE cor., Section 36-25½-115, Wyoming structure, is bottomed at 815 feet and fishing. Midwest Refining Co.'s No. 1 Larcher, SE SE, Section 25-37-117, Grays River, is bottomed at 2,029 feet (corrected) and is repairing rig.

Park County

California Exploration Co.'s No. 2, NW NE, Section 14-48-102, on the Pitchfork structure, being drilled by Producers & Refiners Corp., is drilling at 3,525 feet with the 8¼-inch at 2,584 feet. The well was reported showing about 1 bbl. per hour of black oil from the top of the Tensleep at 3,455 feet. This is the second well drilled on the structure, the first hole being lost before the objective was reached. The Midwest Refining Co.'s No. 31 Frannie Oil, SW cor. NE, Section 25-58-98, Frannie Dome, is drilling in sand at 2,615 feet and showing water. This well is an offset on the east to No. 36 Rosenberg, which had water in the same horizon, but which was drilled down through the Embar and Tensleep and found oil in the Madison lime. At a total depth of 3,013 feet, the Rosenberg well flowed 2,424 bbls. of black oil in 24 hours. Afterward water came in and production dropped to 60 bbls. It was then pinched in and gradually the oil increased until recently it was making several hundred barrels.

Midwest's No. 31 Rosenberg, SW cor. SE, Section 24-58-98, is drilling at 1,985 feet in gray shale. The 10¾-inch is at 1,966 feet. Yellowstone Petroleum Co.'s No. 1, NW NE SE, Section 7-57-97, South Frannie, is reported showing some oil at 3,892-96 feet in the Madison lime. Water flowed over the top from the lime at 3,725 feet. Texas Production Co.'s No. 1 Freeman, NW SE, Section 30-51-100, Oregon Basin, is bottomed at 3,488 feet and is fishing for drill pipe which was stuck at 2,350 feet. Continental Oil Co.'s No. 26 Elk No. 2, SE NE, Section 24-58-100, Elk Basin, is drilling at 1,405 feet.

MONTANA

The Ohio Oil Co. has a good producer in the Border Field in its No. 1 Farbo estimated at 150 bbls. Its location is Section 1-37-4, and the pay was found at 2,525 feet and drilling was stopped at 2,540 feet. This well found some oil and gas in the Vanalta sand at 2,490 feet and some water at 2,515 feet, then a shale break and the top of a sand (Cosmos) at 2,522 feet.

This shows there are two producing horizons about 60 to 70 feet apart in the Border Field, the top one being called the Vanalta sand and the lower the Cosmos. These sands lie about 70 feet under the Sunburst sand. The Ohio well will set at rest the supposition that there is an ocean of water in the lower part of the producing sands which has prevented many of the wells drilled to date from drilling into the sand as far as they probably should have.

The Ohio Oil Co.'s second well hit the Vanalta sand at 2,488 feet and has a 3,000,000-foot gas flow there; it is going on to the Cosmos sand. No oil showed in this gas flow. This well is about a half mile west of the present production.

On the Canadian side, Nos. 1 and 2 Vanalta have been drilled deeper and both have increased their production. No. 1 Vanalta was making about 50 bbls. and is now putting 200 bbls. into the tank every day. Every well on the Canadian side will probably be drilled deeper now the Ohio well has shown the way.

Dakota-Montana's No. 1 on the McAfee lease on the Montana side of the line is a duster but may be drilled deeper. Eight wells are drilling on the Montana side and four on the Canadian side.

Sunburst Field

In the Sunburst Field two small wells were reported commercial producers after being shot. One owned by the Diamond Oil Co. on Section 33-35-2, will make a 10-bbl. pumper, the other drilled by the Barmac Putnam interests on Section 32-35-1, will make around 15 bbls. Five wells are drilling in Sunburst.

The International Royalty Holdings Corp. reports a good showing of light oil in the wildcat drilling on the Grandview Dome, Section 26-3-3. The showing is said to be good for 5 bbls. but drilling is being continued as the Sunburst sand is only about 100 feet deeper. The showing was found at 1,875 feet.

The Fulton Petroleum Co. has a well in the Pondera Field on top of the sand and should report a completion early next week. This location is on Section 9-27-4.

The Northwest States Utilities Co. has abandoned No. 1 Moore well that was drilled near Winifred in hopes of finding gas to supply gas for Lewistown.

The Ohio Oil Co.'s deep test in the Dry Creek Field, southern Montana, has reached 5,335 feet and is drilling slowly. The bottom of the hole is between the Dakota and Lakota sands and production is expected in the Lakota. The Dakota carried water.

ROCKY MOUNTAIN PRODUCTION

Daily average pipe line runs from the various pools in the Rocky Mountain area for the week ending July 19:

WYOMING	
Salt Creek	27,130
Frannie	170
Big Muddy	2,060
Oregon Basin	2,830
Dutton	50
Elk Basin	880
Byron	10
Warm Springs	150
Lovell	20
Ferris	60
Grass Creek	2,190
Hamilton	910
LaBarge	2,180
Lance Creek	140
Lost Soldier	960
Osage	1,500
Poison Spider	160
Rock River	2,210
Simpson Ridge	70
Teapot Dome	30
Dallas-Derby	250
Hudson	250
South Casper Creek	1,090
Total	45,310
MONTANA	
Cat Creek	1,130
Kevin-Sunburst	5,930
Pondera	2,320
Lake Basin	50
Border	400
Total	9,830
COLORADO	
Moffat	1,142
Fort Collins	1,301
Florence	553
Iles	1,112
Tow Creek	790
Boulder	27
Rangley	50
Total	4,582
NEW MEXICO	
Hogback	460
Rattlesnake	2,613
Table Mesa	679
Artesia	581
Cap Rock (Maljamar)	864
Jal	1,371
Hobbs High	35,547
Lea City	3,762
Miscellaneous (Lea County)	370
Total	44,253
Grand total	105,975
Week ending July 12	88,461
Difference	17,514

ACCURATE COSTS AS BASIS FOR PROFITS

(Continued from Page 34)

of the General Electric Co., has said that the solution of business problems lies in group action.

Charles M. Schwab made the statement that cordial co-operation among the various elements of the steel industry would be worth more than a billion dollars.

Industry must organize, clean its house and fight or find itself hopelessly confused if responsibility is to be left to individual action.

They Ride While Others Pay

Unfortunately, there is to be found a small minority that refuses any co-operative action, and who prefer to ride while the other fellows pay. They are the small, disgruntled group that retards the progress, and prevents constructive work. They feel that they are gaining while they actually lose.

There are many questions that can receive attention in constructive programs of trade organizations.

Research, for the purpose of developing new uses and broadening the market, is one of the most important of all activities. If conducted by an organized industry, the expense to each individual is not a large item though the benefits are very great. One means of meeting the excess capacity problem is by stimulating a greater consumption by the development of new uses. The application of research to technical problems not only tends to reduce costs, but to make possible more intelligent and economical uses.

Price Cutting and Costs

Extreme pressure to obtain business has resulted in price-cutting reaching a point where only the relatively few most efficient plants earn a reasonable profit and even their margin has lately been seriously jeopardized as a result of unrestricted competition. Under such highly competitive conditions there comes a time when the margin between irreducible costs and profits with the most efficiently operated concerns finally narrows to the point where prices will not recede further. There is no need for any cost figures when selling prices are to be fixed by a system of outguessing competition.

The principal purpose of obtaining accurate costs is to establish a base upon which profits may be added. The sum total then becomes the sales price. This method eliminates all consideration of what competition may do and is the only process that can insure successful operation. The acceptance of more constructive methods is essential before there can be any need for cost prices. Eventually this need will become recognized. Profits will then become the incentive with less consideration devoted in trying to guess what price competition may quote.

The use of accurate costs advances intelligent competition. Inaccurate costs, obsolete equipment or inefficiency in operation develops the ignorant, destructive form of competition from which the best organized concerns become infected wherever ignorance prevails.

The plants operating on the basis of the highest efficiency are the most forceful advocates of distributing intelligent cost data and the collection of statistics realizing that their participation serves as the most effective means of influencing others who may be operating ill-advisedly from weakening the market or indulging in destructive competition.

Salesmanship

One of the most important problems in business today is selling, based upon a fair price to the customer and which will yield a reasonable profit to the manufacturer. Cut out all the frills and the solution of the problem rests with each individual seller. He can solve that problem to his own satisfaction and to his own financial success if he refuses to be bluffed into a sale at a price which will not cover his costs and a reasonable profit.

"That is fine," you say, "but I must meet my competitor's price or lose the business. I know my competitor is selling below cost and I have got to meet his price." And that is exactly where we begin to dig the graves. Is it necessary to sell at cost or at a loss for no other reason than the fear that if you don't, the other fellow will?

Is capacity production at a net loss more desirable than 60 or 80 per cent output at a profit? If one competitor wastes his capital assets, must every other seller in competition match his destructive, ignorant policy? The fact that there are many in every line who are making a profit proves that knowledge and self-restraint are not without their rewards.

There are concerns in highly competitive industries that are displaying that courage year in and year out. True, they may not have the big volume but they have not been drowned in red ink!

Destructive competition and the absence of approved selling methods have brought many customers to the point where they regard low price as the only consideration in their purchases. The falsity of this conception is apparent to all of us, but if it is to be dissipated we must give salesmanship the same consideration they give all the other elements of business.

It takes courage to look a carload order

square in the face and say "No" if the order is not in accord with your established terms and prices. Of course, you can't get all orders without price being the inducement in some cases, but there are many other factors worth talking about. When the price is once submitted, there should be no further concessions. That is salesmanship.

Real salesmanship begins when prices have been established on a basis of total cost plus a reasonable profit and when orders are obtained without concessions affecting either terms or prices. The difficult part of salesmanship is not in selling to people who have already made up their minds to buy at the price quoted, but in selling to those who either do not want to buy or who are not willing to pay a fair price.

Motor Sales Example

Study the selling policies of the automobile industry and you will find them well standardized. The prices and terms established by each company are the same to all. There are no secret rebates. The buyer has confidence in the industry because he knows that when he is ready to buy he can make his purchase without feeling that haggling with the salesman might have resulted in a better price.

Compare this policy with that of an industry where there is no standardization in selling policy. Each sales proposal is subject to varying terms and prices for the same article. Imagine the state of mind of the buyer, his confusion and lack of confidence, his inability to find a dependable basis for a comparison of values. How can he possibly determine whether he has obtained the best price? In the former instance, public interest is protected and confidence sustained. In the latter, public welfare is disregarded, confidence is displaced by uncertainty, and waste exacts a penalty that in the end the public must pay. There is no essential difference between the sale of an automobile, structural steel, steel castings, a toothpick, or an airplane.

In a number of industries there is actually severe trade depression, due largely to inefficient methods that have obliterated all semblance of salesmanship. If the tendency in this direction continues at the present rate, it threatens to develop into trade prostration of the worst kind. The best hope of checking this trend lies in convincing sales executives that volume should not be the sole aim of business.

Fair Profit Needed

We must learn that fair volume, coupled with fair profit, is far more desirable than maximum volume coupled with minimum profit or no profit at all. Price-cutting is a direct result of unreasonable selfishness for business. Minds filled with rancor, hate and jealousy and suspicion, will be met with similar mistrust. Confidence and faith in one another, as Judge Gary stated, is vital if progress is to be made.

A successful plan to remove the destructive, unfair business conditions existing within an industry is to fill it so full of constructive, fair methods that there will be no chance for the evil practices to flourish.

There is altogether too much competition in this country on poor quality. Poor quality businesses are not making expenses as a general rule. The solution is to produce a quality article, trademark it, guarantee its purity and quality, and then advertise it intelligently.

Why worry about the price-cutter? Every time he cuts a price, he is only adding to his own difficulties. Why not let him do all the worrying?

We must not talk prices and say that we can beat our competitor's prices. We must talk quality and service for the consumer is willing to pay the price if you can convince him on the two vital factors of quality and service.

Price is entirely a mental reaction. It is too high if the customer thinks it is and it is cheap if that reflects what he thinks. It is our duty to create in the customer's mind the belief that our price is right, and that we are asking him only what we are entitled to get.

It is a very easy thing to reduce prices below a reasonable minimum, but it is an extremely difficult proposition to bring prices back to a level where reasonably profitable returns are to be experienced.

The Buyer's Interest

The buyer who is interested in the prosperity of his company must recognize that his ability to succeed depends upon his success to sell the merchandise of his company at a profit. He is not only a buyer but he should have an equal interest in the problem of selling. To jeopardize the interests of his principal sources of supply, forcing prices below cost in a vain attempt to obtain a cut-price or concession is the direct means of undermining the whole business structure.

The buyer and the seller are as dependent upon each other as are the producer and distributor of the product. In the long run, buyer and seller alike will be adversely affected by any influence which undermines the stability of the other. The best assurance for the consistent prosperity and progress of both and of American business as a whole lies in active co-operation to foster constructive influences and stamp out those such as price-cutting which are responsible for destructive competition that menaces the welfare of all concerned.

When business men will give heed to the obvious way out of their difficulties, they will be in a better position to plan intelligently. When industry holds fast to the fundamental law of profitable business it will become profit-minded and that is a long way toward the goal of success. There is no substitute, however, for individual responsibility and no hope of effective co-operation without it.

The era of narrow, selfish individualism is passing. We must enter upon a new era of co-operation and cordial understanding between buyer and seller, producer and distributor and the individual units of our various industries. Only upon such a foundation can a sound economic structure be erected. Individuals and organizations alike must learn that neglect of the spirit of "live and let live" so ably expounded by Judge Gary, produces little but friction, heat, rancor and impairment of earnings.

LOGS IN WINKLER OIL POOL ARE NOW VALUABLE

(Continued from Page 30)

part of the basin is a group of beds commonly referred to as the "Big lime." In the Hendricks Field the "Big lime" is divided by most geologists into a thin, upper member known as the "Brown lime," and a lower member of undetermined thickness known as the "White lime." Sample examination shows that there is a fourfold division of the "Big lime" series in this area, or, more concisely, two main divisions, the upper one of which is divided into three phases.

The upper main division or "Brown lime" of common usage ranges in thickness from 180 feet on the west side of the field to 350 feet in the Humble Oil & Refining Co.'s No. 1-B Walton, in Section 47, Block 26, this well being on the east flank of the structure. The topmost member of this main division is a nonsandy phase of dolomitic limestone of variable thickness, and characteristically browned with oil. This member thickens to the eastward and grades into a sandy phase. Gradation of lime to anhydrite and vice versa is common throughout this member, and in some cases the gradation to anhydrite is complete.

From the crest of the structure to the west limit of production this member is persistent in thickness and composition. Change in section, together with thickening and thinning, is common in the saddles and on the east flank.

The middle division of the "'Brown lime" section is a sandy phase characterized by an abundance of large, well sorted and rounded frosted quartz grains, with an average diameter of seven-tenths millimeter. Quartz is the most plentiful mineral, constituting about 95 per cent of the grains. Pyrite occurring both as a cement and fine crystals is common. Acid plagioclase feldspars and orthoclase showing varying degrees of alteration and microcline are present. Zircon, tourmaline and pyrite are the common accessory minerals.

Lower Sandy Phase

The lower sandy phase of the "Brown lime" section is that member occurring in contact with the "White lime." It is made up of fine sandstones interbedded with brown and gray dolomite limestone. Unlike the middle sandy phase, the quartz grains in this member are uniform throughout, and the large frosted quartz grains are not present. Drill cuttings from various wells in the area show these frosted quartz grains to be present in this lower section. Since the top of the Brown lime is the common casing point in this area, it must be considered that lower samples are subject to contamination.

A careful examination of the cores from Southern Crude Oil Purchasing Co.'s No. 88-M-15, in Section 33, Block 26, shows a definite break between these two sandy members, the lower member containing no frosted quartz grains. Microcline is the common feldspar, and occurs in greater abundance than in the middle sandy phase. Plagioclase and orthoclase occur in small amounts. Amphiboles and pyroxenes make up a small percentage of the grains.

The lower main division or "White lime" is the main producing section in the Hendricks Field. Most of the wells show a bentonite bed which is a fairly definite marker and occurring from 40 to 50 feet below the top of the "White lime." Other bentonite zones have been encountered below this point, but these have been of little value for correlation work, since bentonite has a great tendency to cave upon absorption of water, so that unless the succeeding beds differ from the first, these new horizons cannot be determined from cuttings.

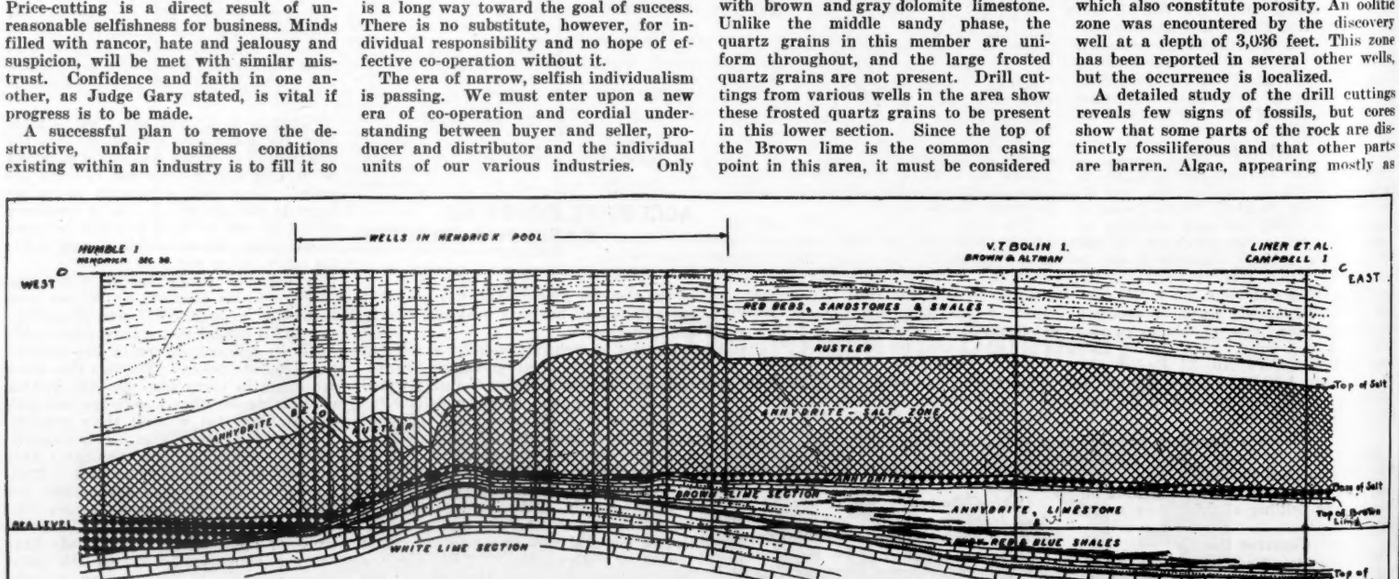
Consist of Dolomitic Limestones

The "White lime" series consist of light gray, white and flesh-colored dolomitic limestones with some fine-grained gray sandstones. In some parts of this area the upper part of the "White lime" section is made up entirely of sandy lime. This change in the "White lime" section occurs on the extreme west flank of the structure, in the deep saddle at the south end, and on the east side. These sandstone members with interbedded limestone are lenticular and abrupt changes of limestone to sandstone in offset wells are common. Beds of dark red shales and sandy shales varying in thickness from several feet to as much as 20 feet are found in these sandy lime areas.

Porosity occurs in the form of irregular solution cavities as large as 2 inches in diameter. These cavities are seen in some cases to be filled with anhydrite. Pyrite occurring in minute crystals lines the cavities and shows the purely secondary nature of the anhydrite. Solution cavities lined with calcite crystals are commonly found in the pay horizons. Calcite occurs in abundance in the "White lime" section on the west flank of the structure and may be due to fracturing.

Drill cuttings from the pay horizon in the discovery well and the offset wells show as much as 50 per cent free calcite, some of the crystals measuring one-half inch in length. In the granular phases there are very minute interstitial voids which also constitute porosity. An oolitic zone was encountered by the discovery well at a depth of 3,036 feet. This zone has been reported in several other wells, but the occurrence is localized.

A detailed study of the drill cuttings reveals few signs of fossils, but cores show that some parts of the rock are distinctly fossiliferous and that other parts are barren. Algae, appearing mostly as



EAST-WEST GROSS SECTION THROUGH HENDRICK POOL
SHOWING RELATION OF BROWN LIME TO WHITE LIME STRUCTURE

Figure 3.

more or less rounded balls and showing concentric structure have been found in cuttings from several wells.

A few gastropods have been found in various cores, but these have not been identified.

Occurrence of Oil and Gas

Oil and gas are produced from the "White lime" section of the "Big lime" in this area, and in some parts of the field from the "Brown lime" section immediately above it. With the exception of the extreme west flank of the producing area, the first commercially productive oil zone is encountered from 150 to 250 feet below the top of the "White lime." On the top of the fold this horizon is gas-bearing and here the first oil pay is encountered approximately 300 feet in the "White lime" section.

East of the axis of the fold the first oil pay is even more variable, occurring from 400 to 450 feet below the top of the "White lime." Other oil-bearing porous horizons are encountered on the west flank at intervals of approximately 175 and 275 feet from the top of the "White lime." These porous horizons are fairly uniform from the west edge to the crest of the structure, but they are not correlative with those occurring on the east flank, where they vary considerably throughout the section and are often only local porous lenses.

The occurrence of commercially productive oil horizons in the "Brown lime" member of the "Big lime" section on the extreme west flank of the structure is attributed to migration from the regular pays through fractures. Oil and some gas also occur in this part of the field in the sandy lime section at the base of the "Brown lime" member. This occurrence has also been noted in the south end of the field in Sections 3 and 10, Block B-12. In addition to this pay, wells drilled in these two areas encounter the regular "White lime" pay.

Gas Zones Not Uniform

Gas is found in varying amounts throughout the field. Like the oil-producing horizons, these gas zones are not uniform, except on the west flank, where the most persistent zone is in the sandy lime member at the base of the "Brown lime." During the early development of the field, gas in large quantities was encountered on the top of the structure in the first three pay zones correlative with those found on the west flank.

The Texon Oil & Land Co.'s No. 1-A Hendricks, located in the southwest corner of the southeast of Section 34, Block B-5, was the first large gasser drilled in this area. This well encountered 5,500,000 feet of gas in the lower "Brown lime" section and increases in the "White lime" at 2,545 feet and 2,600 feet. Some gas and a small showing of oil was encountered from 2,633 to 2,648 feet, this being the first oil-producing horizon in the structurally lower wells. Gas increases were found at 2,746 feet, 2,790 feet, and at 2,811 feet it gauged 50,000,000 feet of gas. Oil was encountered at 2,898 feet with increases to 2,935 feet, from which depth it began producing 4,068 bbls. per day. This production increased to a maximum of 4,300 bbls.

The Atlantic Oil Producing Co.'s No. 1-C Hendricks, located in the southwest corner of Section 40, Block B-5, encountered gas in the Texon pay at 2,787 feet, and when drilled to 2,978 feet it gauged 60,000,000 feet of gas with a slight spray of oil. After producing gas for four months it began making 200 bbls. of fluid per hour, 18 per cent water. All of the early wells drilled in this gas area have a similar history.

On the east side of the area, large gas wells are encountered in the "Brown lime" section. The Amerada Petroleum Corp.'s No. 1 Walton, in the southwest corner of the north half of Section 48, Block 26, encountered 50,000,000 feet of gas at 2,410 feet.

Deposition of the Permian

The "White lime" member of the "Big lime" series is shown by its fossil content to be a deposit of normal marine waters. The overlying anhydrite salt series is a dessicated sea deposit which lies conformably upon the shallow water "Brown lime" phase of the "Big lime" series. Open sea conditions existed during "White lime" time with shallowing towards its close and during the deposition of the "Brown lime." This shallowing of the sea resulted in a barrier which partly cut off the West Texas Basin from the main ocean. Dessication followed with accompanying deposition of the evaporite series.

The presence of fine sandstones, red and blue sandy shales in the upper part of "White lime" section shows that this area was being supplied by detrital material from a constant source. This deposition continued throughout "Brown lime" time. Conditions were not static and lenses of sandstones and dolomitic limestones were deposited locally in the "Brown lime" section. That this condition existed during the end of "White lime" deposition is shown by the occurrence of numerous sandstone lenses and red sandy shales in the upper "White lime" section.

Two distinct periods of deformation are recognized in the development of the structural features in this area. Movements near the close of "White lime" time resulted in the Winkler County arch which remained a positive segment during "Brown lime" deposition. Figure 3 is an east-west cross section through the Hendricks Field showing overlap of the "Brown lime" on the "White lime" barrier. Development of porosity was probably contemporaneous with "Brown lime" deposition, since the top of the structure was exposed to the action of circulating ground waters.

Axis of the Fold Shifted

Movements at the end of Permian time and during Triassic resulted in the shifting of the axis of the fold east to its present position. This movement accounts for the presence of the "Brown lime" and sand section on the west flank of the structure (Figure 3). Since this section shows a decided thinning from the present axis westward to the Humble Oil & Refining Co.'s No. 1 Hendricks, in Section 36, Block 26, which did not encounter any "Brown lime," it is very probable that this well is located close to the ancient axis.

Maps using contours drawn on the top of the "Brown lime" as datum depict the probable subsurface structure of the Hendricks Field and indicate the presence of a long anticline, having a slightly northwest-southeast trending axis. The highest area of uplift occurs in the southeast part of Section 45, Block 26, and northeast part of Section 41, Block B-5, these areas being above the 650-foot contour. Numerous irregularities such as depressions and local highs about individual wells are due largely to errors in measurement resulting from crooked holes.

The west flank of this Hendricks fold is marked by a steep inclination of the brown lime, especially below the 600-foot structural contour. The structural interpretation indicates a dip of approximately 600 feet to the mile along this flank. On the east flank the dip varies considerably and shows a decided flattening on the east central part of the structure in Section 47, Block 26.

A structural contour map of the Hendricks Field drawn on the top of the "White lime" as datum varies from that obtained by using the top of the "Brown lime" in that minor irregularities are not as numerous and the east dip of the fold is accentuated. Several small closed structures, notably the one in Section 47, Block 26, and that in Section 35, Block 5-B, are not reflected on the "White lime."

Accumulation of Oil and Gas

There has been much discussion among geologists as to the source of the oil and gas that is being produced from the dolomitic limestones of West Texas. Some maintain that the oil has migrated upward from the black carbonaceous shales of the Pennsylvanian. Others incline to the belief that sufficient minute organic life occurred in the Permian seas of West Texas during lime deposition and that the source of the oil is in the dolomitic limestones. The writers are inclined to favor the latter theory.

In the Hendrick Field, the most prolific production is found on the crest and west flank of the structure. This condition follows since the greatest porosity is present in these areas.

On June 27, 1927, Independent Oil & Gas Co.'s No. 1 Hendricks, Section 42, Block 5-B, drilled into sulphur water at a total depth of 3,092, or minus 268 feet, sea-level datum. Several other wells were drilled into sulphur water and all encountered this bottom water at approximately the same depth below sea level.

On December 13, 1927, Magnolia Petroleum Co.'s No. 2 Hendricks, Section 29, Block 5-B, began showing sulphur water while drilling at 2,955 feet, or minus 149 feet, sea-level datum. Within two weeks' time the three offset wells began showing sulphur water, and three months later 75 wells were making from one-half per cent to 98 per cent water.

Most of these first wells were located in three distinct zones in Sections 29, 34 and 41, Block 5-B, and Section 4, Block 12-B. And as drilling progressed, water began showing in all of the wells in the Hendricks Field. At present all of the wells in the field are making large quantities of water.

DEEP PUMPING RESEARCH IN CALIFORNIA FIELD

(Continued from Page 33)

mover and pumping gear. Rotary balances are used almost to the exclusion of other types, and crank balances are in the majority in order to keep crankshaft stresses low and have sufficient effective weight. The long strokes necessary for relatively slow speed pumping in these deep wells necessitates a very heavy counterbalance as naturally the mechanical advantage of the balance over the crank arm is low. Theoretical counterbalance force in some cases, is greater than attainable with standard equipment, even with three-quarters-inch rod strings in use, and requires a well braced rigid rig to handle. To get the necessary weight on the crank balance, one company is using weights cast of lead in place of the usual cast iron.

Efficient Pumping Speed

By the most efficient speed is meant that which is best adapted to all other factors: A good rod motion, free from excessive vibrations; low rod stresses; a plunger stroke sufficient to keep up production; and one which will give good power economy and not overload the pumping mechanism nor prime mover in either average or peak loads. This can only be determined by inspection of the card and meter readings.

These four cards, Figure 3, from a steam engine driven pumping well, have a 3-inch insert pump, inverted type, pumping approximately 400 bbls. a day, mostly water, at 4,470 feet. This well has a concrete block balance between the jack and samson post, weighing approximately 6,200 pounds, together with eight pairs of auxiliary weights on the bandwheel balance giving a total effective balance at the rods of 9,750 pounds, which is about 1,500 pounds under the theoretical weight. The maximum load indicated is about 17,400 pounds at the counterbalance peak in the middle of the upstroke. During the 29½ stroke card, the

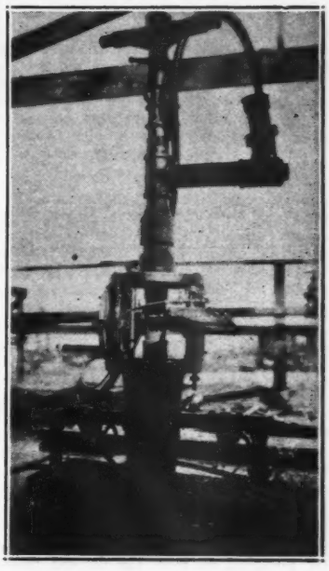


Figure 6—Closeup of the units supporting the tubing.

concrete block suspension was actually leaving the beam at the end of the downstroke. Operation of deadweight balances at such speed is apparently not feasible.

Of particular interest is the change in the type of card between the 23¼ stroke and 27 stroke cards, at 26 strokes per minute. A speed around 26 for this well would be a very poor operating speed. Maximum load at 27 strokes per minute is on the counterbalance peak and the maximum at 29½ strokes per minute is on the load pickup.

Reduction of Sucker Rod Stresses

Reduced rod stresses may result from a proper regulation of the other factors, if the dead loads are not too high. Heavy stresses due to the rod weight alone can be remedied only by the use of higher tensile and endurance limit rods, or the use of combination strings.

Power and Prime Movers

As to prime movers, economy must govern. Steam gives a smoother load card

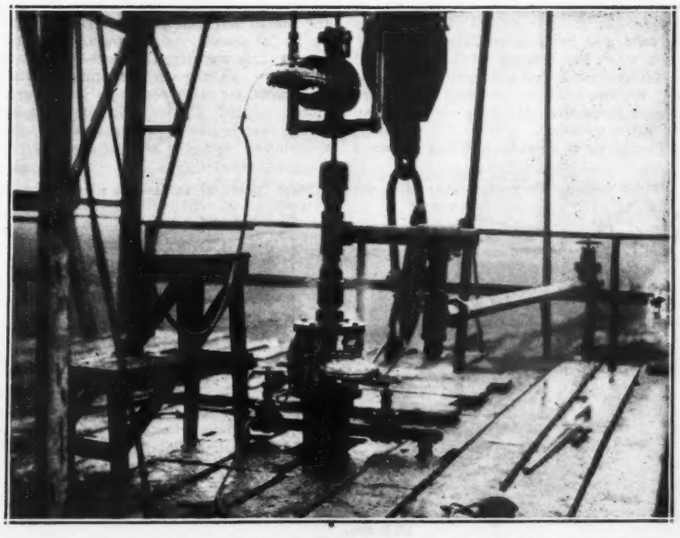


Figure 5—Three diaphragm units used in taking alternate rod and tubing load cards. The two units on the tubing were centered as closely as possible, and the proportion of load supported by each determined by taking cards under dead load. Needle valves permitted taking cards from each independently.

in deep wells, and the difference is more noticeable under severe conditions. A smooth card will result with steam engine drive even with the well badly underbalanced, but pumping with steam often cannot compete with the motor or gas engine in lifting cost. The smoother card is due to the tendency of the engine to slow down as the loads increase while a motor or gas engine tends to maintain its speed regardless of the load. Proper

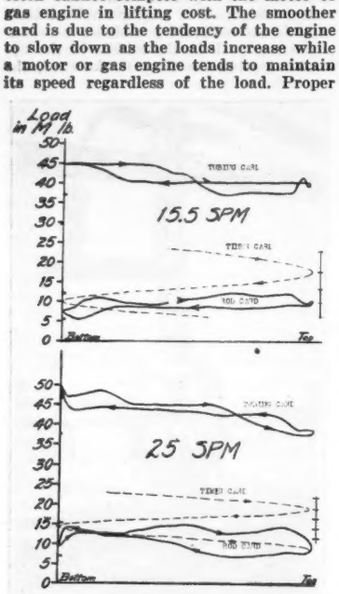


Figure 7.

regulation of the other factors allows motor pumping on even the deepest wells. Twenty-five/sixty-five motors are coming into use and are more suitable for these deep wells than 20/50 motors which are often considerably overloaded and even the 25/65's are pulling upwards of 30 horsepower even in well balanced wells. Even larger motors would be required if the wells were underbalanced to gain increased plunger strokes.

Mechanical Difficulties

Rigs must be braced to withstand these heavy pumping stresses. Looseness creates

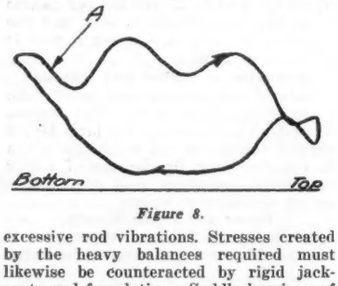


Figure 8.

excessive rod vibrations. Stresses created by the heavy balances required must likewise be counteracted by rigid jackposts and foundations. Saddle bearings of bronze are often required. Beams must be solid and hangers sufficiently strong. Snug wrist pin bearing in the crank and in pitman made for a minimum of trouble, as these must transmit the force from the counterbalance as well as from the prime mover.

The cards in Figure 4, though from a shallow well, show what effects rig looseness can have. Looseness to this extent could not be tolerated on one of the deeper wells but looseness does exist, especially with wooden rigs and does create excessive rod loads. In a recent instance, a concerete foundation and jack-post mounting showed a large increase in pumping efficiencies over the same rig, prior to the change.

Kinematics of Beam Motion

Experiments have been conducted toward changing the type of motion but these have not yet been applied to these deep wells, nor with the object of compensating for rod stretch. Cam driven pumpers, and counter-clockwise rotation of the standard rig crankshaft might be considered under this head.

Plunger Stroke

The problem of the plunger stroke for a given rod stroke at various speeds above the lower limit is something which is hard to predetermine. Certain tests have led us to believe there are possibilities of obtaining this stroke with more certainty from dynamometer cards than given by any heretofore published method. The tests are yet incomplete and the results have not yet been proven of uni-

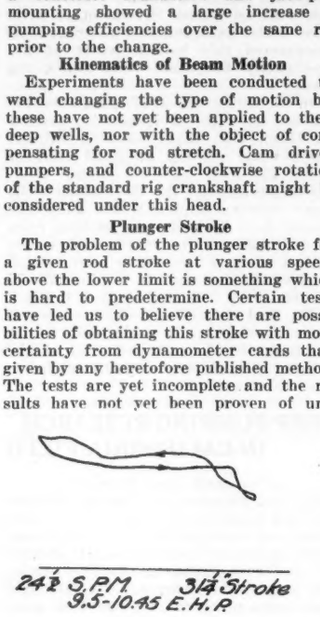


Figure 11.

versal application. Enough has been done, however, to draw certain conclusions.

At higher speeds, the time required for stress transfer from the bottom of the rods to the top is a material factor and becomes of more importance than the higher speed. In other words, it is the average of the stresses in the rods that must be used to compute the stretch. Stress waves travel at the speed of sound —17,200 feet per second in steel. In a 4,300-foot well that will mean a quarter second phase difference between loads at the polish rod and those at the plunger, or at 20 strokes per minute, with uniform crank velocity, 30 degrees of crank revolution. During such an angle of crank movement actual cards show large variations in load. Comparison of scratched pump barrels has shown remarkably close correlation with the stretch computed by using the average loads effective in the rods and tubing (computed separately) at any instant. The method of taking tubing loads is interesting and will be described.

Three diaphram units were used in taking the tubing cards as shown in Figure 5. One was used on the polished rod and connected to one connection of the indicator in the usual manner. Two were used between the flanges of the tubing head, which were connected to each other and through a tee to the other indicator

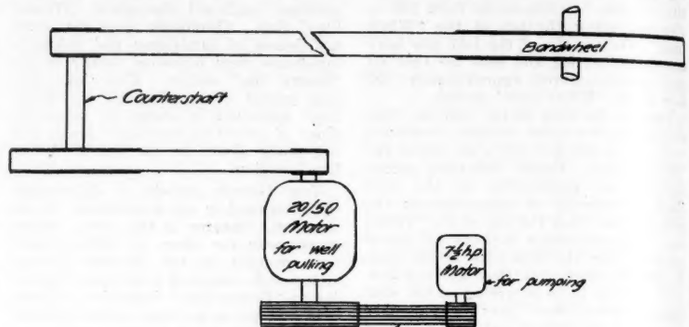


Figure 10.

connection. The needle valves on the diaphrams and indicator connections made it possible to take cards from any unit separately.

The units between the flanges were centered as closely as possible by measurement and then checked by taking dead load cards on each one separately.

Figure 6 shows a close-up of the tubing diaphram units. Long tubing head

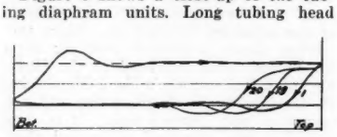


Figure 12.

bolts were used and the levers of the unit set straddle the bolts in the same manner as they would be on the polished rod.

This photograph shows also how the tubing was filled with water to give a starting load with a known weight of liquid in the tubing from which calculations could be made based upon a dead column practically free from gas.

Tubing and rod cars in Figure 7 are from a well in which the pump is set at approximately 5,600 feet, using three-quarters-inch rods, 2½-inch upset tubing and 2½ insert type pump. Cards were taken at a stroke of 42¾ inches at the polished rod. The phase relation between the time the load is picked up by the rods and the time before it goes off at the tubing is of interest and emphasizes the need for this time factor consideration in all plunger stroke computations at higher speeds.

A detailed analysis of these results could not be given as yet but certain conclusions may be drawn.

These tests showed that the movement of the tubing may be much greater than is occasioned by mere removal of the dead load. Apparently the working valve did not close until after the whip, as the load did not go off the tubing. Hitting fluid causes the tubing to vibrate quite extensively and rod whip caused by underbalancing is not an actual gain in a large number of cases.

Figure 8 is shown simply as an illustration of an indication of a rod whip which apparently does not give the working valve time to close. Where the up and down stroke lines follow each other closely (as in A) this condition seems to exist.

High Volumetric Effeciency

Excessive pump displacement usually results in the plunger hitting fluid on the downstroke. The deeper the well the worse are the rod conditions produced. An excess load of 3,000 pounds is indicated in Figure 9. In this connection it might be well to mention that delayed load pickup so often noticed on dynamometer cards appears to be due to the vibration and following of the tubing subsequent to the hitting of fluid. The rods sometimes do not take the load until almost the middle of the upstroke. Hitting fluid is an indication of excess displacement, gas trouble, or both, and suggests reduction in pumping speed and use of a good gas anchor.

Figure 9 indicates the effects of hitting fluid on a deep pumping well. It likewise shows the difficulties encountered

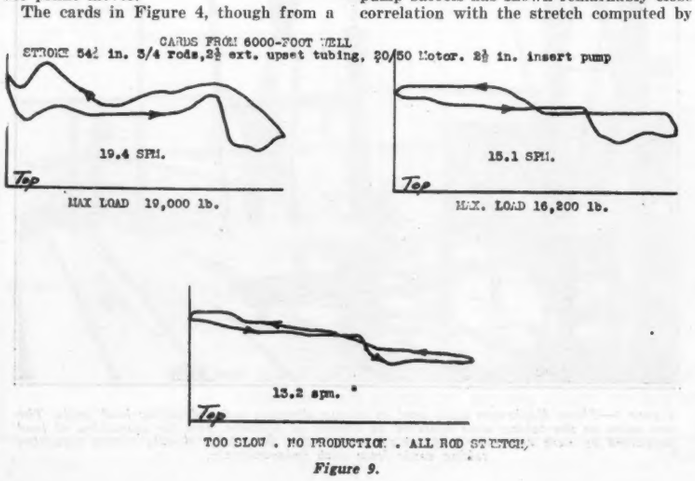

CARDS FROM 6000-FOOT WELL
STROKE 54½ in. 3/4 rods, 2½ ext. upset tubing, 20/50 Motor. 2½ in. insert pump
19.4 SPM.
Top
MAX LOAD 19,000 lb.
15.1 SPM.
Top
MAX. LOAD 16,200 lb.
13.2 spm.
Top
TOO SLOW . NO PRODUCTION . ALL ROD STRETCH.

Figure 9.

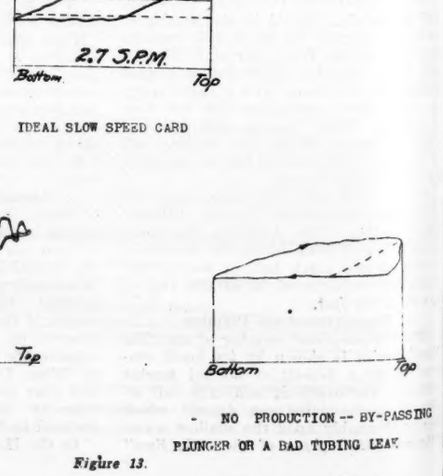


Figure 13.

when the elimination of excess speed to attain high volumetric efficiency is attempted. An entire change of conditions, decrease in plunger size, a lengthening of the stroke, may be necessary to correct such a condition.

The regulation of pumping displacement to the amount of fluid that the well will make has resulted in large savings for many California leases. Wells making less than 150 bbls. of fluid daily are candidates for the "slow motion" class. By slow motion is meant 12 strokes per minute, or less.

Many types of slow motion rigs are being tested, the important requirement being first and maintenance costs. Auxiliary gears and countershafts comprise most of the test units, and speeds used run as low as 0.6 strokes per minute for a 15-bbl. well.

One method of pumping at a slow speed is shown in Figure 10. The 20/50-horsepower motor originally on the well and which has served to pump it before production declined was used as a countershaft and fitted with a multiple V-belt pulley of 20-inch diameter and driven by a 7½-horsepower motor. The driving pulley in this case was 5.4 inches, as determined from the estimated displacement. A card later taken showed a higher friction than estimated, so that it was necessary to increase the driving pulley to 7 inches in diameter to get the required displacement for the well's production.

In this type of installation the larger motor is available for pulling the well, but pumping is done at the correct speed, at high motor efficiency and at greatly reduced power consumption.

Some of the newer individual units now being manufactured provide for these low speeds and as a larger number of such wells have old wooden rigs with excessive vibration, these units are coming into rapid use where the production warrants the investment.

Cards from a test of a 50-bbl. producer are shown in Figure 11. The same production was obtained at 10 strokes per minute with a 39.5-inch polish rod stroke as was obtained with 24.5-31.25-inch strokes per minute. Power cost was lowered 50 per cent and in addition there was the further saving of reduced maintenance of rig and pumping equipment.

Well tests indicate that with plunger and cup type pumps volumetric efficiencies of 90 per cent can be expected. In actual practice it seems advisable to figure on but about 80 per cent to provide for pump wear and to reduce well pulling.

Figure 12 shows a well pumping at 10 strokes per minute with a 3-inch liner pump at 925 feet. The proportionate cut in speed can be approximated by measuring the horizontal distance between the rod stretch lines of Card No. 1 at the top and comparing them with the distance between these lines on the lower card, which was taken after the fluid had been pumped to a constant level.

It is interesting to note that on one 12-bbl. well when pumped at 28 strokes per minute with the original installation the well required pulling on an average of once every two weeks, but since slowing down to less than 3 strokes per minute it operated steadily over six months without trouble and has maintained its production.

The top card in Figure 13 was taken from the well just described, pumping at the speed indicated and giving practically an ideal card. The two lower cards are indicative of slow speed trouble often not apparent at higher speeds. A slight rig looseness caused the first and the second indicates a leakage of some type.

Close study of pumping troubles has resulted in very noticeable reductions in lifting costs. It is significant that the companies which are periodically testing their pumping wells are reducing power requirements and service costs. Many of the deep wells mentioned are being pumped on the beam with surprisingly little rod trouble to date. Properly handled the deep well does not present an insurmountable problem.

SINCLAIR PIPE LINE SALE APPROVED BY DIRECTORS

(Continued from Page 31)

Continent to our refineries at Kansas City and Whiting, and from Kansas City to our large refinery at Casper, Wyo., and the Salt Creek oil fields, together with a strong reserve of crude oil. This will round out the company's integration, putting it in a position of independence as regards crude reserve and transportation for oil to refineries and markets.

"The gross revenue of the Sinclair Pipe Line Co. alone for the year 1929 was approximately $23,600,000. After deducting operating costs, general administrative expenses, depreciation, interest, discounts, and Federal taxes, the net income was $9,400,000. This represents about 8 per cent of the investment of the Standard of Indiana in the companies, without taking into consideration returns from the Sinclair Crude Oil Purchasing Co."

The Sinclair Pipe Line Co. owns nearly 4,300 miles of trunk lines and about 2,600 miles of gathering lines leading into the oil fields. The carrying capacity of the system is in the neighborhood of 140,000 bbls. a day. Delivery capacity at the terminus on Lake Michigan is 75,000 bbls.

The Sinclair Crude Oil Purchasing Co. has long been a buyer of crude oil for the Sinclair Consolidated and the Standard of Indiana in the producing fields of Texas, Oklahoma, Kansas and Wyoming.

TESTING WASHINGTON FOR OIL AND GAS

(Continued from Page 31)

Co., which also had interests in Montana and Turner Valley.

Eastern Side of State

The eastern part of the State is receiving its share of attention also. Besides the gas field of Benton County, mentioned previously, tests are being made in Spokane and Stevens Counties. At Chewelah, Stevens County, Indian Foot Oil Co. is drilling at about 1,200 feet. Denny Oil Co. has its No. 1 test near Wapato and United Oil Co. of Spokane has dropped its No. 3 to a depth below 1,200 feet at Manitou. Three wells are being drilled continuously by the Walla Walla Oil, Gas & Pipe Line Co. to keep up and augment the gas production for the Northwestern Natural Gas Co.

Favorable Geological Report

Most of the sections now being drilled in the State have been pronounced favorable for the accumulation of commercial quantities of oil and gas by geologists making surveys, among whom can be included William T. Nightingale, formerly of the Ohio, Dorsey Hager, Lupton of the United States Geological Survey, Louis Z. Johnson and Doctor Moran of Los Angeles, Marcel Daly, Putnam of Western Gulf Oil, King of the Carter Oil, etc.

Ideal Drilling Conditions

Drilling conditions are ideal. Absence of extremes of climate permit of year-round drilling. There is an abundance of water and fuel. All areas thus far selected as being potentially oil bearing are immediately adjacent to transportation—none more than 5 miles distant from a main line road and all practically on, at least, logging roads.

There has never been an adequate test of any of the structures, although for some years spasmodic drilling has gone on from time to time. These, however, were all foredoomed to failure by reasons of inadequate finance and incapability of operators. Exception is made of two wells drilled by the Standard Oil of California at Moclips and Pacific Beach. The one at Pacific Beach is in a distinct syncline. At Moclips the well was capped and no information regarding what was found was forthcoming.

ARGUMENT OFFERED IN SOCONY-VACUUM CASE

(Continued from Page 32)

York, an integrated company, which produces, refines, and distributes its refined products to the consumer. The Vacuum company, which sells "Mobiloil" and other lubricants, now has 19.2 per cent fewer retail outlets than it had four years ago, due to the policy of oil companies to limit sales to their own brands, Mr. Sheets disclosed. Foreign sales increases have made up for the domestic losses, he stated, but reiterated that Vacuum, due to present conditions, must merge to protect its domestic sales, the proposed consolidation with Socony being designed to forestall conditions which have handicapped Vacuum in the past.

Other Mergers Discussed

The possibility of further consolidations of former Standard Oil subsidiaries in the event that the Socony-Vacuum merger is consummated was suggested by John H. Amen, special assistant attorney general, in questioning Mr. Sheets.

"You have testified," said Mr. Amen to the witness, "that Vacuum wishes to join Socony for the advantages that would come to it through an alliance with an integrated company that has its own crude supplies. Would it not be equally advantageous for such companies as the Standard Oil of Ohio and the Standard Oil of Kentucky which you have said are not integrated companies to join themselves with companies that are integrated?"

"Generally speaking, I would say it would be an advantage to them," replied Mr. Sheets.

"In your opinion," asked Mr. Amen, "is it not likely that if this merger goes through other companies will seek to follow suit?"

Mr. Sheets on cross examination admitted he had heard reports of a contemplated merger between Standard Oil

WASINGTON OPERATIONS

Well—	Location	Remarks	Rig	Company
Whatcom County				
Birch Bay No. 1	Birch Bay	Drilling 210 ft.	Rotary	Home Petroleum Co., Bellingham
Goshen No. 1	Goshen	Spudding in	Standard	Bellingham Oil & Gas, Bellingham
Acme No. 1	Ferndale Ridge	Resuming 270 ft.	Standard	Acme Oil & Gas, Bellingham
Sumas No. 2	Sumas Prairie, B. C.	Drilling 588 ft.	Combination	Sumas Oil & Gas Co.
Skagit County				
Samish No. 1	Samish Island	Rigging up	Rotary	Merger Oil & Gas Co.
Kitsap County				
Chico No. 2	Chico	Drilling 1,010 ft.	Rotary	J. T. Cain Oil Co.
Snohomish County				
Lake Goodwin No. 2	Warm Beach	Drilling 385 ft.	Rotary	Whalstrom et al
Clallam County				
Quillayute No. 1	Quillayute Prairie	Rigging up	Rotary	Pacific Coast O. & G.
McMillan No. 1	Forks	Spudding.	Star	Mohawk-Olympic Co., Ltd
Jefferson County				
Olympic No. 1	Hoh River	Locating	Rotary	Olympic Oil & Refining Co.
Grays Harbor County				
Vesta No. 1	Vesta	Drilling 1,308 ft.	Standard	W. W. Felger et al
Gray-Tac No. 1	Aberdeen	Drilling 200 ft.	Combination	Gray-Tac Oil Co.
Pacific County				
Union No. 1	McGowan	Drilling 4,250 ft.	Combination	Union Oil Co.
Yakima County				
Simcoe No. 1	Near Wapato	Drilling 2,162 ft.	Standard	Simcoe Oil Co.
Miocene No. 1	Union Gap	Fishing 1,360 ft.	Combination	Miocene Petroleum Co.
Denny No. 1	Wapato	Drilling 395 ft.	Star	Denny Oil Co.
United No. 3	Manitou	Drilling 1,242 ft.	Standard	United Oil Co.
Campbell No. 1	Mabton	Locating	Rotary	Campbell Petroleum Co.
Benton County				
Walla Walla No. 1	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 2	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 3	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 4	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 5	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 6	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 7	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 8	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 9	Rattlesnake Hills	Producing gas*	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 10	Rattlesnake Hills	Drilling 145 ft.	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 11	Rattlesnake Hills	Drilling 210 ft.	Star	Walla Walla Oil, Gas & P. L. Co.
Walla Walla No. 12	Rattlesnake Hills	Spudding in	Star	Walla Walla Oil, Gas & P. L. Co.
West Coast No. 1	Rattlesnake Hills	Drilling 323 ft.	Standard	West Coast Co.
Yellowhawk No. 1	Rattlesnake Hills	Drilling 305 ft.	Standard	Yellowhawk Gas & Oil
Stevens County				
Chewelah No. 1	Chewelah	Drilling 1,310 ft.	Standard	Indian Foot Oil Co.

*Total production approximately 10,000,000 cubic feet. Delivered through 81 miles of pipe line to towns of the Yakima Valley.

of New Jersey and Standard Oil of California but added that he had also seen the reports denied. The witness refused to commit himself as to whether Socony and Vacuum if merged would create a combine second in size and world resources only to Standard of New Jersey and suggested that there was a question as to whether Standard of New Jersey or Royal Dutch-Shell was the largest oil organization in the world at present.

Mr. Sheets admitted under questioning of the special assistant attorney general that both Standard of New York and Vacuum have sufficient resources to buy all the retail outlets either will need. It developed during Mr. Sheets' testimony that Vacuum is negotiating for two distributing companies operating 62 service stations and a number of dealer outlets but details were withheld by the Government at the request of Vacuum attorneys. It was also stated that Vacuum is shipping crude oil from the Kettleman Hills Field in California to its refinery in Czechoslovkia and that Vacuum, Standard of New Jersey, Atlantic Refining, and Gulf Refining, will construct refineries in France for handling crude oil from Russia, Persia and Venezuela.

Presentation of evidence by the defendant companies is expected to take up some time, following which the New York hearings will be terminated, and the case held over until the resumption of the trial of the Government's suit in the Federal Court at St. Louis, Mo.

FORM CARBON BLACK EXPORT ASSOCIATION

The Carbon Black Export Association, Inc. has filed papers under the Export Trade Act (Webb-Pomerene law) with the Federal Trade Commission for exporting carbon black. The association will maintain offices at 60 East Forty-second Street, New York City.

Officers of the association are: Norman Lee Smith, president and director; Edmund Billings, vice president and director; R. H. de Greeff, secretary and director; E. V. Gent, assistant secretary; G. A. Williams, treasurer and director; H. W. Huber, assistant treasurer and director, and J. W. Herron, director. Members are: United Carbon Co., Charleston, W. Va.; Binney & Smith Co., New York City; J. M. Huber, Inc., New York City; R. W. Greeff & Co., Inc., New York City; Godfrey L. Cabot, Inc., Boston; and the Palmer Gas Products Corp., Chicago.

The Export Trade Act grants exemption from the antitrust laws to an association entered into and solely engaged in export trade, with the provision that there be no restraint of trade within the United States, or restraint of the export trade of any domestic competitor, and with the further prohibition of any agreement, understanding, conspiracy or act which shall enhance or depress prices or substantially lessen competition within the United States or otherwise restrain trade therein.

SITUATION IMPROVING PRESIDENT REESER SAYS

NEW YORK, July 19.—"The crude oil situation continues to improve every day," stated E. B. Reeser, president of the American Petroleum Institute and of the Barnsdall Oil Corp., "and the present rate of curtailment in output indicates a substantial withdrawal of crude oil from storage.

"Refiners apparently have come to their senses, but they have not done as much as they should. Heavy withdrawals from refined stocks may be expected for the remainder of the season.

"The distributing division of the industry, throughout the entire country, continues to sell gasoline to consumers at prices that are not remunerative. Ultimately the consumer must pay a fair price, and with the correction of the crude supply, coupled with proper refinery operations, a reasonable advance to the consumer may be expected."

EXPECTING IMPROVEMENT IN DEMAND FOR STEEL

By B. E. V. Luty

PITTSBURGH, Pa., July 21.—Predictions are now general, although not universal, that steel is on the verge of experiencing an improvement in the sum total demand. Some of the predictions even set the next two or three weeks as the time within which improvement will become distinctly visible. Others mention September 1 or later dates.

Such predictions are based in part upon the low rate to which steel production has fallen. A difficulty with that view is that the rate is perhaps not so low after all. A fair guess for this month's average steel ingot production is 60 per cent of capacity, which seems low when thus expressed, but it has been very rare for steel production to be at capacity and unusual for it to be within 10 per cent of capacity, while furthermore capacity has been increasing year by year.

A tonnage comparison may put the matter in a different light. At a 60 per cent operating rate steel ingot production would be about 122,000 tons daily. There was as low a rate as that in November, 1927, in July, 1925, and during six months of 1924. On those three occasions general business was regarded as merely being in a lull, while now it is popularly thought to be in a state of depression.

Thus the argument that steel should naturally rebound from a low point is not particularly cogent. On the other hand there is seasonal precedent that when steel is pursuing an ordinary course it does grow more active after July.

The increase, if any, would have to come almost wholly from what may be called general line buying, i.e., not from the consuming industries whose position can be observed, for these promise little improvement. Fabricated structural steel has been doing so well right along that there is more room for fear it will lose something than ground for hope it will gain. Freight car building is practically done for the year. Annual rail orders are practically all completed while there is no secondary buying movement as sometimes occurs and the new buying season is months away. Agricultural implement manufacture is between seasons, and some improvement may come in that direction but that would be no large tonnage. Automobile production is extremely light but no large demand can be expected in the late months of any year, such as used to occur when many people changed from open to closed cars on the approach of winter. As to line pipe, production is already at capacity. There will be heavier production in the second half of the year than in the first half, but not much heavier than at present.

Finished steel prices are not subject to much test as buying is chiefly in small lots, but even at that they present no great appearance of steadiness. The only quotable decline in the last week is in automobile sheets, for some time at a nominal market of 3.70 cents, there being hardly any buying, now at 3.60 cents on any fair sized tonnage. The total decline in automobile sheets in 12 months is $10 a ton.

While no formal announcements have been made, it is understood that both the National Tube Co. and the Youngstown Sheet & Tube Co. will put their new electric weld line pipe departments in operation by the end of this month, National at the Christy Park works, near McKeesport, in the Pittsburgh district, Youngstown Sheet & Tube Co. at the Brier Hill works near Youngstown, Ohio. It is understood the National department will have a capacity of 4½ miles a day in sizes 14 to 30-inch. Producers of all classes of line pipe of the larger sizes became well filled up weeks ago. Lately there has been no important buying but much business is in sight in projects of various sizes and orders are likely to be placed at intervals keeping capacity fully engaged through the winter. Prices are very steady. Standard pipe is as formerly only moderately active.

RELIEF

"I see that they would like to have Uncle Sam buy 100,000,000 bushels of wheat in order to help the wheat market," remarked one trader.

"If that request goes through, perhaps we might induce Uncle Sam to buy 1,000,000 shares or so of representative stocks in order to help the stock market," replied another trader.—Quoted in the Wall Street Journal.

And while they're at it, how about having Uncle Sam buy 1,000,000 bbls. of oil to help the oil industry?

RUSSIAN OIL TO BRITAIN

A press statement by a representative of the Russian Oil Products, Ltd. is to the effect that British imports of Soviet oils amounted to 217,000,000 gallons in 1929, compared with 123,000,000 in 1928. The 1929 total amounted roughly to 20 per cent of the entire Soviet oil exports, but an increase in the next few years is claimed to be expected. New ocean installations are now being set up at Swansea, Portslade, Dublin, and in Scotland to take care of the increased receipts. In addition about a dozen local distribution centers are being established at a cost of from £30,000 to £40,000.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 66)

Sun Oil Co.'s No. 1 First National Bank, C Sec. 6, J. H. Gibson Sur. ..... Drlg. 1,710 ft.

CROCKETT COUNTY

Dixie Oil Co. and Amerada's No. 2 Powell, 258 ft. N. and 2,349 ft. W of NE cor. of Sec. 42, T.C. Ry., but located in Sec. 52, Blk. BB ..... Location.

Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur..... Spudded and shut down.

Magnolia Pet. Co.'s No. 1 Hoover, 2,310 ft. from N and 330 ft. from E of Sec. 12, Blk. 1, G.C.&S.F.R.R. Sur... Shut down 5,400 feet.

Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur..... Location.

G. Schaul's No. 1 Bouscour Est., 330 ft. N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur. ..... Rig up and shut down.

CULBERSON COUNTY

Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E, Sec. 20, Blk. 89, Public School Land ..... Location.

Kornrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land ..... Drlg. 840 ft.

ECTOR COUNTY

C. C. Davis et al's No. 1 Hendricks, C SW, Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 4,012 ft.

Humble Oil & Ref. Co.'s No. 1 Jones, 330 ft. from S and 423 ft. from W of Sec. 6, Blk. 44, T.&P. Sur..... Rig up.

Independent Oil & Gas Co.'s No. 1 Eldson, 1,250 ft. S and 2,144 ft. E of NW cor., Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ..... Shut down 3,800 ft.; 1,100 ft. oil in hole.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M.M.Br.&A. Sur. ..... Drlg. 2,375 ft.

T. P. Coal & Oil Co.'s No. 1 McKenzie, 1,650 ft. from S and 330 ft. from E of Sec. 282, Blk. 45, Twp. 2s, T.&P. Sur. ..... Shut down 3,870 ft.; swabbing dry.

R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor., Sec. 27, Blk. 44, T.&P.R.R. Sur... Drlg. 3,710 ft.

Simms Oil Co.'s No. 3 University, 2,310 ft. from N and 330 ft. from W of Sec. 1, Blk. 35 ..... Drlg. 2,900 ft.

Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ..... Shut down 3,750 ft.; flowed 110 bbls. on the 12th; shut in for storage.

Skelly Oil Co. et al's No. 1-C University, 2,310 ft. from N and W of Sec. 2, Blk. 35 ..... Drlg. 150 ft.

Sunray Oil Co. et al's No. 1 Jones, 2,330 ft. from N and 440 ft. from E of Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur... Plugged back to 3,817 ft.; preparing to shoot.

The Texas Co. et al's No. 8 Connell, 330 ft. from S and 440 ft. from E of Sec. 2, Blk. B-16 ..... Drlg. 3,025 ft.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. ..... Shut down 3,089 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 2 Barrett, 330 ft. from N and W of NE, Sec. 199, B.B.B.&C. Sur. ..... Drlg. 2,505 ft.

Cranfill & Reynolds' No. 1 Cooper et al, 330 ft. from S and 990 ft. from W of Sec. 198, B.B.B.&C. Sur. ..... Shut down 300 ft.

Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Sec. 200, B.B.B.&C.R.R. Sur. ..... Drlg. 1,775 ft.

Mid-West's No. 1 Decker, 330 ft. from S and W of W 80 ac. of N 160, Sec. 8, Richardson Sur. ..... Drlg. 2,680 ft.

Roeser & Pendleton's No. 1 Steele, 660 ft. from N and 440 ft. from W of N half of SW, Sec. 210, B.B.B.&C. Sur. ..... Show gas 1,845-65 ft.; underreaming 8¼-in. casing; total depth 2,675 ft.

The Texas Company's No. 1-A Teagarden, 150 ft. from S and 420 ft. from E of Sec. 8, Richardson Sur. ..... Drlg. 2,768 ft.

GAINES COUNTY

Humble Oil & Ref. Co.'s No. 1 Carswell, 660 ft. S and E of NW cor. of Sec. 23, Blk. A-27, Public School Land.. Shut down 4,193 ft.; show oil 4,150-70 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 6, H.&.G.N. Sur. ..... Spudded and shut down.

Richard's No. 1 Stoker, 330 ft. from N and W, Sec. 2, Blk. 2, G.H.&H. Sur. ..... Top lime 2,366 ft.; drlg. 3,010 ft.

GLASSCOCK COUNTY

Associated Oil Co.'s No. 1 Coffee, 2,310 ft. E and 330 ft. from S of Sec. 27, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 2,510 ft.

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.P. Sur. .. Total depth 2,956 ft.; fishing casing.

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. .. Shut down 660 ft.

World Oil Co.'s No. 1 Edwards, 330 ft. from S line and 2,310 ft. from W line of Sec. 13, Blk. 84, Twp. 2s, T.&P. Sur. ..... Drlg. 2,755 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ..... Sulphur water 1,433-46 ft.; shut down 1,456 ft.

McGinley-Sigler's No. 1 Hyman-C, 330 ft. N and 990 ft. W SE cor., Sec. 93, Blk. 29, W.&N.W.R.R. Sur. ..... Location.

Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ..... Drlg. 2,765 ft.

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Shut down 261 ft.

HUDSPETH COUNTY

Rio Bravo Oil Co.'s No. 1 Southern Pacific right of way, 1,800 ft. N and 1,000 ft. E of Sec. 16, Blk. 72, Twp. 7, T.&P. Sur. ..... Fishing for tools 1,400 ft.

IRION COUNTY

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 ... Shut down 1,105 ft.

Cromwell et al's No. 1 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,230, G.C.&S.F. Sur. ... Fishing for tools 940 ft.

Cromwell et al's No. 2 Tankersley, 200 ft. from N and 150 ft. from W of Sec. 1,219, T.C.R.R. Sur. ... Drlg. 1,272 ft.

Straughn & Texannati Oil Co.'s No. 3 Nutt, 804 ft. from N and 150 ft. from W of NE cor. of NW, Blk. 6, Gonzales Co. School Land ... Drlg. 100 ft.

P. E. Williams' No. 1 Ash, C of Sec. 20, Washington County ... Show oil 7,931 ft.; shut down 8,890 ft.; may drill deeper.

Webb et al's No. 1 Nutt, 150 ft. from S and 116 ft. from W of Blk. 5, Gonzales Co. School Land ... Location.

JONES COUNTY

Gibson & Johnson's No. 1 Hudspeth, 1,125 ft. from N and 483 ft. from E of Sec. 22, Edward Miles Sur. ... Shut down 2,543 ft.; swabbing 50 bbls. oil and 25 bbls. water; top pay 2,542 ft.

Shabeen et al's No. 1 King, 6,750 ft. from N and 150 ft. from E of M. Bueno Sur. No. 197 ... Shut down 1,690 ft.

KENT COUNTY

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H, H.&T.B. Sur. ... Shut down 273 ft.

LAMB COUNTY

Graham Oil & Gas Co.'s No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ... Shut down 4,428 ft.

LOVING COUNTY

Dixie and Phillips Pet.'s No. 1 Johnson, 1,320 ft. from N and E of Sec. 38, Blk. 54, Twp. 2s, T.&P. Sur. ... Drlg. 3,580 ft.

Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. ... Building rig.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ... Shut down 3,383 ft.

Hadlock et al's No. 2 Russell, 1,650 ft. SW of NE line, 2,310 ft. NW of SE line, Sec. 80, Blk. 1, W.&N.W. R.R. Sur. ... Drlg. 3,900 ft.

Henshaw et al's No. 1 Reagan & McElvain, 990 ft. from SE and 330 ft. from SW, Sec. 84, Blk. 1, W.&N.W. Sur. ... Location.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ... Spudded 140 ft.; shut down.

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur. ... Rigged up and shut down.

Lockhart's No. 2 Wheat & Ramsey, 440 ft. from NE and 880 ft. from NW, Sec. 83, Blk. 1, W.&N.W. Sur. ... Drlg. 1,240 ft.

Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. ... Underreaming 12½-in. csg; total depth 700 ft.

Rush et al's No. 1 Wheat, 1,650 ft. from NW and 330 ft. from SW of Sec. 85, Blk. 1, W.&N.W. Sur. ... Drlg. 555 ft.

California Co.'s No. 2 Reagan & McElvain, 440 ft. from NW and SW, Sec. 84, Blk. 1, W.&N.W. Sur. ... Drlg. 725 ft.

California Co.'s No. 4 Reagan & McElvain, 330 ft. from NE and 1,650 ft. from NW, Sec. 84, Blk. 1, W.&N.W. ... Rig.

Lee O. White et al's No. 1 Russell et al, 320 ft. from NW and 2,200 ft. from SW, Sec. 80, Blk. 1, W.&N.W. ... Drlg. 170 ft.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. Sur. ... Shut down 190 ft. for casing.

George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. ... Drlg. 5,145 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 300 ft. from S and W, Sec. 1, B.S.&F. Sur. ... Shut down 835 ft.; show oil 709-11 ft.

Panhandle Ref. Co.'s No. 2 Eckhart, 1,820 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. ... Drlg. 2,184 ft.

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ... Drlg. 2,220 ft.

MITCHELL COUNTY

Gant & Teas' No. 1 Handley, 330 ft. S and W parallel to section lines of NE cor. of SE, Sec. 12, Blk. 28, Twp. 1n, T.&P. Sur. ... Shut down 3,115 ft.; show oil 2,946-3,104 ft.

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. ... Total depth 3,112 ft.; top pay 3,038 ft.; 1,000 ft. oil in hole; swabbing 40 bbls. in 24 hrs.

Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W parallel to section lines of NE cor., Sec. 8, Blk. 27, T.&P. Sur. ... Spudded 10 ft. and shut down.

PECOS COUNTY

Barnes et al's No. 1 Sanford, 160 ft. from NW and 157 ft. from SW of Sec. 55, Blk. 10, H.&G.N. Sur. ... Shut down 220 ft.

Black et al's No. 1 Pecos Valley Oil Co., 1,120 ft. from SE and 1,420 ft. from SW, Sec. 34, Blk. 3, H.&T.C. Sur. ... Shut down 1,215 ft.

Buell & Hagan et al's No. 1-A Pecos Valley Oil Co., 150 ft. from NW and 1,470 ft. from NE of Sec. 22, Blk. 10, H.&G.N. Sur. ... Shut down 1,547 ft.; estimated 2,000,000 ft. gas from 1,545-47 ft.

Galt Brown's No. 1 Neville, 3,265 ft. from E and 764 ft. from S, Sec. 74, Blk. 194, G.C.&S.F. ... Shut down 825 ft.

Hayes et al's No. 1 Lea, C NW of NE, Sec. 9, Blk. 106, T.&St.L. Sur. ... Location.

G. A. Henshaw, Jr., Inc.'s No. 1 University, 1,650 ft. from S and 990 ft. from E, Sec. 32, Blk. 16 ... Skidded 25 ft.; rig up machine.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ... Drlg. 1,810 ft.

Humble Oil & Ref. Co.'s No. 1 Thompson, 1,980 ft. N and E of Sec. 96, G.C.&S.F. Sur. ... Shut down 249 ft.; fishing.

Huasman Oil Co.'s No. 1 Esters, 960 ft. from N and 300 ft. E, Sec. 83, Blk. OW, T.M.R.R. Sur. ... Shut down 1,680 ft.

Independent O. & G. Co.'s No. 4 McDonald, 155 ft. from N and 2,485 ft. from E, Sec. 46, Blk. 12, H.&G.N. ... Drlg. 965 ft.

Magnolia Pet. Co.'s No. 1 Byrne, 2,490 ft. from SE and SW, Sec. 54, Blk. 10, H.&G.N. Sur. ... Location.

McCarty Oil Co.'s No. 2 Gray, 2,370 ft. from N and 450 ft. from W, Sec. 591, G.C.&S.F. Sur. ... Shut down 1,292 ft.; show gas 1,230 ft.

McCurdy & Brown's No. 1 Tippett, 1,150 ft. from S and 150 ft. from W of SE, Sec. 40, Blk. 197, G.C. &S.F. Sur. ... Location.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 194, G.C.&S.F. Sur. ... Location.

Messenger et al's No. 2 Byrne, 2,490 ft. from NE and SE of Sec. 54, Blk. 10, H.&G.N. Sur. ... Shut down 1,367 ft; top pay 1,364 ft.; flowing 93 bbls. daily.

Messenger et al's No. 1 Butz, 1,830 ft. from NW and 1,170 ft. from SW Sec. 54, Blk. 10, H.&G.N. Sur. ... Drlg. 415 ft.

J. R. Miller et al's No. 1 Bennett, 359 ft. W from CWL, Sec. 1, Blk. 119, G.C.&S.F. Sur. ... Shut down 1,640 ft.

J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. Sur. ... Shut down 1,230 ft.

J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. ... Show oil 1,785 ft.; shut down 2,200 ft.

Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. ... Shut down 1,953 ft.

Peren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. ... Shut down 1,323 ft.

Perren's No. 1 Jackson, 200 ft. from NW and SW of Sec. 28, Blk. 3, H.&T.C. Sur. ... Drlg. 1,365 ft.; show oil 1,355 ft.

Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W Sec. 13, Blk. 194, G.C.&S.F. ... Drlg. 650 ft.

Plymouth Oil Co.'s No. 4 Perry, 300 ft. from N and 420 ft. from E, Sec. 14, Blk. 194, G.C.&S.F. Sur. ... Cellar.

R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C.R.R. Sur. ... Spudded and shut down.

Phillips Pet. Co.'s No. 3 Monroe, 3,860 ft. from N and 1,255 ft. from E, Sec. 39, Blk. 194, G.C.&S.F. ... Shut down 1,267 ft.

Sure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ... Drlg. 920 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ... Location.

Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. ... Shut down 2,070 ft.

California Co.'s No. 1 Fromme, 330 ft. from NE and NW Sec. 106, Blk. 10, H.&G.N. Sur. ... Drlg. 1,295 ft.; show gas 1,165 ft.; show oil 1,195 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW of Sec. 31, Blk. 34, H.&T.C. Sur. ... Location.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&St.L. Sur. ... Shut down 3,504 ft.

Transcontinental Oil Co.'s No. 1 University, 1,980 ft. N and E of SW cor., Sec. 18, Blk. 18, University Land ... Shut down 4,920 ft.

W. F. Walsh et al's No. 1 Scharbaur Cattle Co., 330 ft. S and 990 ft. E from C, Sec. 16, Blk. 136, T.&St.L. R.R. Sur. ... Drlg. 2,718 ft.

Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. ... Location.

Webb's No. 3 fee, 1,900 ft. from W and 223 ft. from S, Sec. 105, Blk. OW, G.C.&S.F. Sur. ... Shut down 441 ft.; show gas at 410 ft.

PRESIDO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N and 1,188 ft. from E lines of Sec. 245, Blk. 4 ... Shut down 2,630 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land ... Well flowed 965 bbls. 24 hrs. ending July 17; total depth 8,668 ft.

Beesley et al's No. 1 Sawyer Cattle Co., 1,320 ft. from N and 3,960 ft. from E, Sec. 8, J. G. Robinson Sur., elevation 2,536 ft. ... Drlg. 2,560 ft.

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ... Top pay 8,220 ft.; total depth 8,220 ft.; averaging 45 bbls. per day.

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 250 ft. from W of Sec. 25, Blk. 9 ... Shut down 2,400 ft.

Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W, Sec. 36, Blk. 9 ... Total depth 8,633 ft.; flowed 1,858 bbls. 24 hrs. ending July 17; 13,400,000 ft. of gas.

Westvde Investment Co.'s No. 1 Scott, 1,280 ft. N and 1,320 ft. from W, Sec. 177, Blk. 1, T.&P. Sur. ... Drlg. 2,854 ft.

REEVES COUNTY

E. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ... Shut down 380 ft.

Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 50 ... Shut down 1,860 ft.; show oil 1,820 ft.; cleaning out after two shots; filled up 200 ft. with oil.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from E of Sec. 7, Blk. 5, H.&G.N. ... Drlg. 260 ft.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. ... Show oil 3,410 ft.; shut down 3,660 ft.

California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ... Drlg. 2,450 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ... Shut down 580 ft.; show oil 2,303-95 ft.; gas pocket 2,303 ft.

Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. ... Derrick.

George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 ... Show oil 2,028 ft.; shut down 2,643 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW, Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. ... Shut down 4,060 ft.

Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ... Shut down 6,842 ft.; sailing from 5 to 10 bbls. of 50 gravity oil every 3 to 5 hrs.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A.R.R. Sur. ... Shut down 2,395 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C.R.R. Sur. ... Shut down 750 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. ... Fishing 4,912 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ... 2,000 ft. oil in hole; total depth 3,320 ft.; fishing bit; top pay 1,750 ft.; swabbed 106 bbls. in 5 hrs.; filled up 600 ft. in 20 hrs. after swabbing.

Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. ... Shut down 4,373 ft.

Camp Springs Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N. ... Shut down 471 ft.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. ... Spudded and shut down.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ... Shut down 4,665 ft.

Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ... Drlg. 2,695 ft.

STERLING COUNTY

Mann et al's No. 1 Reed, 330 ft. from N and 2,310 ft. from W, Sec. 16, Blk. 14, S.P.R.R. ... Drlg. 1,433 ft.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ... Location.

TAYLOR COUNTY

Clark et al's No. 1 Kendall, 250 ft. from N and W of farm in Willis Avery Sur. ... Drlg. 725 ft.

Eastland Oil Co.'s No. 1 Hunter, 1,574 ft. from E and 3,418 ft. from S of William R. Ellis Sur. ... Rig on ground.

Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-acre tract, Sec. 31, Guadalupe County School Land ... Total depth 2,412 ft.; drlg. 2,350 ft.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land ... Show oil 4,917 ft.; shut down 6,001 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE, Sec. 10, Blk. A, S.P.R.R. Sur. ... Shut down 1,080 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ... Shut down 2,180 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C, Sec. 6, Georgetown Ry. Sur. ... Shut down 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor., Sec. 10, Blk. 176, T.&P. Sur. ... Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C, Sec. 17, Blk. D-7, E.L.R.R. Sur. ..... Shut down 880 ft.; moved off machine.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. ..... Shut down 5,200 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 640 ft.

TERRY COUNTY

Atlantic et al's No. 1 Carlisle, 990 ft. from S and E of Sec. 58, Blk. E, E.L.&R.R. Sur. ..... Drlg. 4,802 ft.

TOM GREEN COUNTY

Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, E.T.C.R.R. Sur. ..... Location.
Ellis' No. 3 Lewis, 1,350 ft. S and 450 ft. E of SW cor. Jas. Webb Sur. 77, but in Albert Black Sur. 75 ..... Shut down 1,101 ft.
Fitzgerald & Tallaferro's No. 1 Bennett, C SW, Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P.R.R. Sur. ..... Machine.
Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Fishing for tools 3,275 ft.
E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N, Sec. 6, Blind Asylum Land ..... Show oil 418-20 ft.; total depth 632 ft.

UPTON COUNTY

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T.R.R. Sur. ..... Location.
Eppenauer Drlg. Co.'s No. 3 Chaney, 1,147 ft. from N and 990 ft. from W, Sec. 18, Blk. 3, M.-K.-T. Sur. ..... Junked and abandoned; total depth 2,263 ft.; skid 20 ft. south.

VAL VERDE COUNTY

A. Bluhm's No. 1 Yoast, 1,760 ft. N, 600 ft. W of SE cor., Sec. 31, Blk. 3, I.&G.N. Sur. ..... Location.
Independent Operators' No. 1 Whitehead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Drlg. 5,757 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L.&R.R. Sur. ..... Show oil 1,525 ft.; fishing 3,035 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y. ..... Shut down 4,009 ft.

WARD COUNTY

Atlantic and Delmar's No. 7 Hayzlett, 2,070 ft. from NW and 1,878 ft. from SW, Sec. 17, Blk. 5, H.&T.C. Sur. ..... Shut down 2,520 ft.; top pay 2,484 ft.; shot twice; cleaning out; averaging 75 bbls. per day.
Bradford et al's No. 1 Murry, 1,782 ft. from NW and 2,157 ft. from SW, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Location.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 5, H.&T.C. Sur. ..... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C.R.R. Sur. ..... Shut down 600 ft.
Penn and Atlantic's No. 1-B Pecos Mercantile Co., 990 ft. from NW and 2,310 ft. from NE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,540 ft.
Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ..... Shut down 5,077 ft.; show oil 5,070 ft.
Richardson's No. 3 O'Brien, 322 ft. from N and 1,680 ft. from W of Sec. 5, Blk. F ..... Shut down 2,815 ft.; will standardize and clean out.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17, is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Drlg. 1,695 ft.
J. E. Smith's No. 1 Clement, 152 ft. SW of NE line and 153 ft. SE of NW line, Lot 7, Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ..... Shut down 2,230 ft.; estimated 1,000,000 ft. gas.
Sturm & Paine's No. 1 Cummins, 748 ft. from NE and 155 ft. from NW of Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ..... Total depth 2,350 ft.; shut down; showing little oil and gas 2,170 ft.

WINKLER COUNTY

Atlantic & Maxwell's No. 1 Daugherty, 1,650 ft. from S and 2,310 ft. from E, Sec. 16, Blk. 74, Public School Land ..... Drlg. 360 ft.
A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Coring 3,060 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Shut down 4,036 ft.
Shell and The Texas Company's No. 1-B Cowden, 600 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ..... Coring 3,060 ft.; had oil show 2,585 ft.
Simms Oil Co.'s No. 1 Sealy, C of SE, Sec. 49, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 1,147 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 68)

Shoupe Bros.' No. 1 Whitson, 330 ft. N and E, SW, Sec. 33, Blk. 12, H.&G.N.R.R. Sur. ..... Rig.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 985 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur. ..... T.D. 3,006 ft; contract depth.
Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... S.D. 4,025 ft.

GRAY COUNTY

Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.& G.N. Sur. ..... S.D. 600 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Baer, 330 ft. S and W, NE, Sec. 126, Blk. 3, I.&G.N. Sur. ..... Rigging up.
Cockrell-McIlroy Oil Co.'s No. 1 Allam, 330 ft. N and E of E½ NE, Sec. 127, Blk. 3, I.&G.N. Sur. ..... S.D. 2,600 ft.
Cockrell-McIlroy's No. 1 Horner, 330 ft. S and E, NE, Sec. 139, Blk. 3, I.&G.N. Sur. ..... S.D. 2,575 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Jackson, 330 ft. N and E of E 110 ac., SE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Rig.
Continental Oil Co.'s No. 1 Wright, 330 ft. S and W, NW, Sec. 13, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,626 ft.
Continental Oil Co.'s Combs & Worley, 330 ft. S and E, NE, Sec. 38, Blk. 3, I.&G.N. Sur. ..... Spudding.
Danciger O. & R. Co.'s No. 2 Bradford, C SW NE, Sec. 148, Blk. B-2, H.&G.N. Sur. ..... Drlg. 1,810 ft.
Danciger O. & R. Co.'s No. 1 Catlin et al, 175 ft. S, 300 ft. E of N 71 ac. of E 231 ac., Sec. 57, Blk. 3, I.& G.N. Sur. ..... S.D. 2,964 ft.
Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,505 ft.
Empire G. & F. Co.'s No. 1 Crow, 875 ft. N and W, NE, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 725 ft.
Empire G. & F. Co.'s No. 1 Sailor, 330 ft. S and W, NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,910 ft.
Gardner Bros. and Collins' No. 2 Saunders, 955 ft. S, 330 ft. E of W 68 ac., E½, J. G. Eustice Sur. ..... Location.
Dick Graham's No. 1 Sullivan, 792 ft. N and W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Rig.
Jewell Oil Co.'s No. 1 Harrah, 330 ft. N and W, of W 40 ac., S 120 ac., E 240 ac., Sec. 163, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,550 ft.
LeFlore Pet. Corp.'s No. 1 Wilson, 330 ft. N and E, Sec. 1, B.S.&F. Sur. ..... S.D. 2,715 ft; 500,000 ft. gas at 2,200 ft. and 2,550 ft.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.&T.N. Sur. ..... S.D. 2,050 ft.
Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. ..... 9,000,000 ft. gas 2,325-35 ft; fishing 2,775 ft.
Magnolia Pet. Co.'s No. 1 Sailor, 990 ft. S, 330 ft. W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Drlg. 600 ft.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and E, of E 80 ac., NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Rig.
McAuley et al's No. 4 Morse, 330 ft. N and W, SE cor. NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,175 ft.
Midwest Expltn. Co.'s No. 1 Cobb, 1,320 ft. W, 400 ft. S, NW, Sec. 165, Blk. 3, I.&G.N. Sur. ..... Location.
Midwest Expltn. Co. et al's No. 1 Waggoner, 1,320 ft. W, 330 ft. N, Sec. 173, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,060 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,120 ft.
Prairie Oil & Gas Co.'s No. 1 Carey, 372 ft. from W and 330 ft. from N of Sec. 114, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,100 ft.
Saulsbury et al's No. 1 Sheridan, 330 ft. S and E, W½ NE, Sec. 184, Blk. B-2, H.&G.N. Sur. ..... Drlg. 3,028 ft; S.G. 2,805-15 ft; S.O. 2,835-45 ft.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. ..... S.D. 2,270 ft.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... Drlg. 1,200 ft.
Smith & McDaniels' No. 1 Chapman, 990 ft. N and E, SW, Sec. 52, Blk. 25, H.&G.N. Sur. ..... S.D. 410 ft.
Reynolds et al's No. 1 Webb, 330 ft. N, 330 ft. E, NW, Sec. 60, Blk. 25, H.&G.N.R.R. Sur. ..... Fishing 2,550 ft.
The Texas Co.'s No. 2 Brown, 170 ft. N, 330 ft. E, NW, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Spudding.
Tedesco Oil Co. et al's No. 1 Morse, 330 ft. N and W, NE SW, Sec. 1, Blk. 26, H.&G.N. Sur. ..... Drlg. 310 ft.
Wilson et al's No. 1 Heaston, 330 ft. S and W, Sec. 160, Blk. B-2, H.&G.N.R.R. Sur. ..... 2,500,000 ft. gas 2,825 ft; S.D. 3,259 ft.

HUTCHINSON COUNTY

Danciger O. & R. Co.'s No. 1 Cheatham, 330 ft. N and E, SW SE, Sec. 38, Blk. Y, A.&B. Sur. ..... T.D. 3,067 ft; T.P. 3,063 ft; swbd. 485 bbls. first 24 hrs.
Great Plains O. & G. Co.'s No. 1 Sanford, C of S 160 of N 320 ac., Sec. 87, Blk. 46, H.&T.C. Sur. ..... Location.
Holmes et al's No. 3 Quinn, 330 ft. S and W, Sec. 7, Blk. 9, I.&G.N. Sur. ..... Rigging up.
Huber & Co.'s No. 1 Christian, 330 ft. E and 990 ft. N of SW, Sec. 33, Blk. Y, A.&B. Sur. ..... S.D. 2,112 ft.
Phillips Pet. Co.'s No. 1 Johnson-Trammell, 930 ft. N, 330 ft. W, SE cor. W½ NW, Sec. 38, Blk. Y ..... T.D. 3,250 ft.
Phillips Pet. Co.'s No. 1 Johnson-Mayer, 990 ft. N and 990 ft. W line, NE, Sec. 37, Blk. Y, A.&B. Sur. ..... S.D. 3,039 ft; P.B. to 2,683 ft. testing.
Phillips Pet. Co.'s No. 1 Johnson-Rudy, 330 ft. W, 330 ft. S, SW SW, Sec. 30, Blk. Y, A.&B. Sur. ..... T.D. 3,346 ft; P.B. 2,975 ft; S.D.
Phillips Pet. Co.'s No. 1 Herring, 330 ft. N and E, W½, Sec. 7, Blk. X02, H.&O.B. Sur. ..... Spudding.
Phillips Pet. Co.'s No. 1 Pease, 330 ft. S and E, Sec. 9½, Z. E. Collier Sur. ..... S.D. 440 ft.
Phillips Pet. Co.'s No. 1 Vake (Hazel), 330 ft. N and W, Sec. 4, Blk. XO2, H.O.&B. Sur. ..... T.D. 2,982 ft; running liner.
Sinclair O. & G. Co.'s No. 1 Johnson Bros., 330 ft. N and E, NW, Sec. 32, Blk. Y, A.&B. Sur. ..... Drlg. 2,254 ft; S.G. 2,230-54 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... Drlg. 2,945 ft.
Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y ..... S.D. 3,050 ft.
Texas Interstate P. L. Co.'s No. 1 Bost, 660 ft. N and E, Sec. 9, Blk. Y-2, T.T.R.R. Sur. ..... Drlg. 2,020 ft; S.G. 1,605 ft.

LIPSCOMB COUNTY

Brown et al's No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.G. 3,760 ft; S.D. 4,142 ft.
Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,954 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Delmar Oil Co.'s No. 1 Jones, 990 ft. E, 330 ft. N, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... S.D. 1,975 ft.
Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. ..... Gas estimated 15,000,000 ft. 3,050-60 ft; T.D. 3,645 ft; to complete as gasser.
Shamrock O. & G. Co.'s No. 1 Shory, 330 ft. N and W, NE, Sec. 187, Blk. 3-T, T.&N.O. Sur. ..... 35,000,000 ft. gas 2,830-3,050 ft; T.D. 3,222 ft.
Texas Interstate P. L. Co.'s No. 1 Zotness, C NW, Sec. 55, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 1,365 ft.
Texas P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 46, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 1,100 ft.

MOTLEY COUNTY

Explin. Co.'s No. 6 Matador, 330 ft. N line, 330 ft. E line, Sec. 132, Blk. M ..... C.O. 4,150 ft.
Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G. B.&B. Sur. ..... S.D. 580 ft.

POTTER COUNTY

Marshall Spivey's No. 1 Bivins, C SW, Sec. 39, Blk. M-20, G.&M. Sur. ..... Drlg. 200 ft.
Canadian River Gas Co.'s No. 1 McBride estate "A," 4,950 ft. S, 330 ft. W, E½ S½, Sec. 98, Blk. 46, H. &T.C. Sur. ..... Cellar.

RANDALL COUNTY

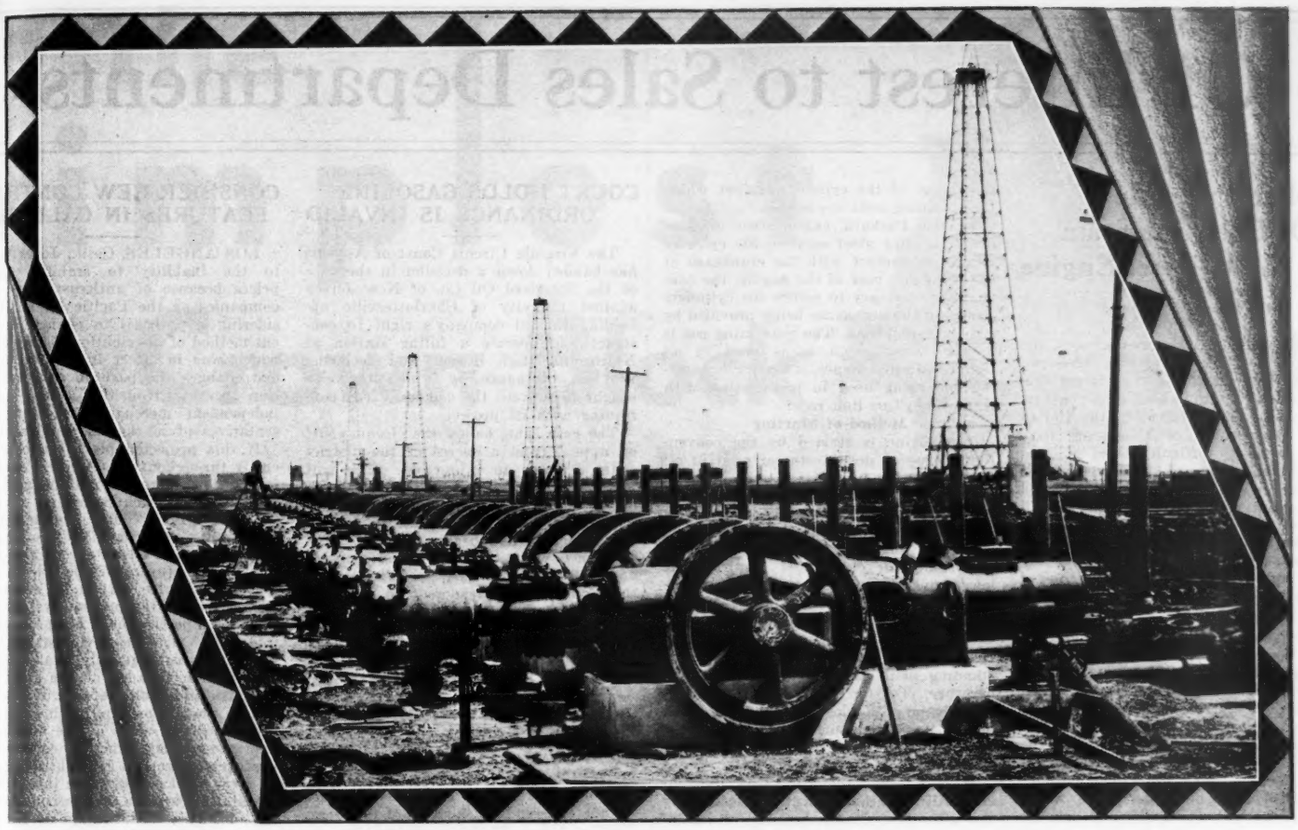
W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14. ..... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 ..... Shot 10 qts. 5,270-93 ft; S.O. 5,288 ft; S.D. 5,992 ft.

WHEELER COUNTY

Johnson et al's No. 2 Hicks, 890 ft. W, 990 ft. S, Sec. 49, Blk. 17, H.&G.N. Sur. ..... Fishing 1,625 ft.
Lone Star Gas Co.'s No. 3 Edwards-Trostle, C NE NW, Sec. 130, Blk. 23, H.&G.N. Sur. ..... S.D. 1,838 ft.
Lone Star Gas Co.'s No. 1 Close, C SE SW, Sec. 78, Blk. 23, H.&G.N. Sur. ..... Location.
Lone Star Gas Co.'s No. 1 Ritchey, C NE NE, Sec. 3, Blk. 24, H.&G.N. Sur. ..... Location.
Long et al's No. 1 Willington, 330 ft. S and W, NW, Sec. 8, Blk. 27, H.&G.N. Sur. ..... Running 12½-in. csg. 250 ft.
Magnolia Pet. Co.'s No. 2 Worley, 330 ft. N and W, NE, Sec. 39, Blk. 24, H.&G.N. Sur. ..... Cellar.
McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H.& G.N. Sur. ..... Drlg. 885 ft.
Murchison & Fain's No. 1 Magnolia Pet. Co., C SE NE, Sec. 54, Blk. 23, H.&G.N. Sur. ..... S.D. 1,452 ft.
Murchison & Fain's No. 2 Purcell, C SW NW, Sec. 50, Blk. 17, H.&G.N. Sur. ..... Rigging up.
Wischkamper et al's No. 1 Kiser, 330 ft. N and E of SW, Sec. 33, Blk. 17, H.&G.N. Sur. ..... S.D. 1,510 ft.
Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ..... Drlg. 230 ft.



Clarks on the Firing Line Will Repulse High Costs

Improvements pioneered and developed by Clark have given "Super 2s" efficiency equalling the very best 4-cycle machines—while retaining 2-cycle simplicity. That is why you see CLARKS in so many new plants. . . . Shown above are 100 horse power "Super 2s" in an Indian Territory Illuminating Oil Company plant at Oklahoma City, Oklahoma.

CLARK

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Of Interest to Sales Departments

Explain Principle Of Fuel Operation With Diesel Engine

By Emory B. Bronte
Associated Oil Co.*

To the Packard Motor Co. goes the honor of having successfully developed the first Diesel aircraft engine. So successful has this engine been that the tests of the Aeronautics Branch of the United States Department of Commerce were passed without difficulty, and it was awarded an approved type certificate. The Packard company has now placed it in quantity production and several makes of planes are being marketed with this Diesel engine at the power plant. It is of the radial air-cooled type, having nine cylinders, is rated at 255 horsepower at 1,900 revolutions per minute and weighs 510 pounds.

In its general external appearance the engine does not differ from the conventional radial gasoline engine, but further than that the comparison does not hold true. Many constructional features never employed before in the building of aircraft engines are incorporated in the Packard Diesel engine, the most noticeable difference being that each cylinder is supplied with only one valve which functions as both an intake and exhaust valve. The valve rocker arm box which surmounts the cylinder is slanted at an angle corresponding to the direction of the slip stream spiral which tends to greatly reduce the parasite resistance of the engine.

Another feature readily noticeable by even the most casual observer is the location of one fuel pump at the rear of each cylinder. These pumps are bolted to flanges on the rear of the cylinders by means of cap screws. Again unlike the gasoline aircraft engine, there are no spark plugs and no ignition system. Also, there is no carburetor.

The principle upon which this engine operates is extremely simple. Pure air is drawn into the cylinder instead of a mixture of fuel and air as in the gasoline engine. The compression ratio of the engine is 16 to 1 and at the end of the compression stroke the air in the cylinders is confined in a much smaller space than would be possible if a mixture of fuel and air were used. It is figured that the temperature of the air in the cylinders at the end of the compression stroke is approximately 1,000° F., which is much higher than the spontaneous ignition temperature of the fuel oil that is used.

Type of Fuel

A light grade of furnace oil has been determined to be most satisfactory, and it is injected by the fuel pump in a highly atomized condition into the cylinder just before the piston reaches the end of its stroke. As the fuel comes into contact with the highly heated air, it ignites and the greatly increased pressure resulting from the increase in temperature brought about by this combustion provided the required impulse to the power stroke. The fact that a low grade fuel oil is used which will ignite only at high temperatures, together with the elimination of a complicated ignition system, removes entirely the fire hazard ever present in gasoline engines.

The crankcase of this engine is constructed in a single piece weighing only 35 pounds, to which the cylinders are secured in a manner never before employed. Usually in a radial air-cooled aircraft engine each cylinder is secured to the crankcase by several studs screwed into the crankcase flange, projecting through the flange of the cylinder against which the retaining nuts are seated.

In the Packard engine two circular hoops of alloy steel encircle the cylinder flanges in contact with the crankcase at the front and rear of the engine, the contraction necessary to secure the cylinders firmly to the crankcase being provided by strong turnbuckles. The connecting rod is of the same design as is used in all radial aircraft engines, a master connecting rod being used in conjunction with eight "baby" or link rods.

Method of Starting

The engine is started by the conventional type of inertia starter used in all types of gasoline aircraft engines, which provides practically instantaneous starting at all times. In starting the Diesel engine, the throttle is held wide open while the engine is being cranked, and no priming or choking is required. At low temperatures it is necessary to use the glow-plugs—small heating units with which the engine is fitted—and with their use no difficulty in starting is experienced even when the engine has been standing many hours in a subzero temperature. To stop the engine it is merely necessary to close the throttle completely against a spring stop which discontinues the flow of the fuel to the cylinders.

It is a safe prediction that this engine will be enthusiastically welcomed by the aircraft industry because of its increased reliability and safety. The most important features in this connection are the elimination of the complicated electrical ignition system, separate fuel injectors to each cylinder, the failure of any one of which in no way affects the other, and the fact that the fuel used will ignite only at very high temperatures.

The light weight and high-speed features of the Packard Diesel engine are important contributions to the design of this type of engine. Heretofore, the Diesel had a high speed of 1,200 r.p.m., and a weight of 25 pounds per horsepower. This engine has a speed of 2,000 r.p.m. and weight of 2.5 pounds per horsepower, thereby affecting an increase in payload carried.

The growth of commercial aviation should be greatly stimulated by the development of this engine, which costs no more than the engines now on the market, even though it provides additional safety features and greater economy of operation.

*Manager, Aviation Department.

NEW CODE PAMPHLET

A new edition of the National Code of Practices for Marketing Refined Petroleum Products, with approved interpretations of the various rules complete to date, has been issued by the American Petroleum Institute. The 32-page pamphlet supersedes that dated August 2, 1929.

In addition to the Code rules and interpretations, the edition includes excerpts from the plan of organization and procedure of the Institute's Division of Marketing applying to Code activity, as well as the resolution adopted July 30, 1929, by the Institute's board of directors approving the Code and establishing a plan of procedure for its adoption by the petroleum industry. The pamphlets are available at cost from the Institute.

FUEL OIL DISTRIBUTION

Members of the American Petroleum Institute can obtain copies of "National Survey of Fuel Oil Distribution," 1929 edition, a publication of the United States Bureau of Mines, Department of Commerce, by making application to the Institute immediately. It is expected copy for the new edition will be sent to the printer shortly.

COURT HOLDS GASOLINE ORDINANCE IS INVALID

The Virginia Circuit Court of Appeals has handed down a decision in the case of the Standard Oil Co. of New Jersey against the city of Charlottesville upholding the oil company's right to construct and operate a filling station at Ninth and High Streets and declaring void an ordinance by which the city sought to prevent the company from continuing with its project.

The case came before the circuit court on appeal from a decree of the district court denying an injunction. The suit was instituted by the company to enjoin enforcement of an ordinance which forbade operation of the gasoline filling station which it had begun to build. The ordinance was attacked as unreasonable and therefore void and also as violating the Fourteenth Amendment to the Constitution of the United States. The district court held the ordinance valid and dismissed the bill. The appeal by the Standard followed.

NEW YORK GASOLINE TAX

A total of $25,690,567 was collected the first year of the 2-cent gasoline tax in New York according to a report made available last week. The collections are for the year ending April 30 of this year. The total was $2,000,000 more than estimated by State authorities at the time the law became effective.

The net amount, after refunds had been made, was $25,126,771, of which $18,807,578 went into the State coffers for use in constructing and maintaining its highway system, and $6,269,192 was distributed to New York City and counties of the State.

Statistics on the amount of fuel used show that 1,409,414,457 gallons of motor fuel were reported during the 12-month period ended April 30 this year. During April, 124,442,550 gallons were reported as consumed or sold, and of this amount tax was paid on 121,711,920 gallons.

The largest total collected in any one month was in September last year covering fuel sold or manufactured in August. During that month $4,231,783 was turned over to the State by distributors. For the next seven months the collections gradually decreased until in April $1,040,704 was turned over to the State treasury, this being the lowest amount collected in any one month. Collections in May, however, jumped 100 per cent as $2,128,482 was taken in.

NEW ETHYL GASOLINE

NEW YORK, July 19.—The Tide Water Oil Sales Corp. has increased the knock rating of its Ethyl Gasoline according to announcements made in eastern newspapers. The corporation refers to its "new and improved" Hi-Test Tydol with Ethyl as "subzero knock rating gasoline." The claim is made that the new gasoline will not knock in any motor car.

The Standard Oil Co. of Ohio has also recently announced a higher knock rating in its Ethyl Gasoline distributed in Ohio. Both companies are said to have secured the new gasolines by increasing the knock rating of their base gasolines and not by adding quantities of tetraethyl lead.

THE TEXAS COMPANY'S NEW OIL

The Texas Company has announced its new motor oil. The new oil is made in five grades C to G inclusive corresponding to the viscosities of the American Society for Testing Materials. The retail price is 30 cents everywhere except for the G grade which sells at 35 cents.

CONSIDER NEW CONTRACT FEATURES IN CALIFORNIA

LOS ANGELES, Calif., July 19.—Due to the inability to stabilize gasoline prices because of antitrust laws, major companies on the Pacific Coast are considering a proposal to change the present method of distribution. This new plan which was in effect in California years ago changes the position of service station operators from the present status as independent merchants to agent representatives of marketing companies.

If this projected plan is adopted generally throughout the Pacific Coast, service station operators will be reimbursed at the end of each period on a commission basis. Four cents a gallon has been suggested as a commission on gasoline sales. The chief advantage of this plan is that manufacturers will be able to specify the retail price of their commodities whereas under the present system the refiner loses possession of his product when sold to independent service station operators and is consequently unable to effect stabilization because of the inability to establish minimum retail quotations.

This plan is meeting with considerable favor although some of the smaller companies may not find it especially advantageous because it will require them to carry stocks of gasoline in agency representatives service station containers until sold. This disadvantage is more than offset, however, by reason of the fact that manufacturers will be able to regulate minimum retail prices and thus hold a whip hand over unethical resellers who persist in cut-throat competition.

MUSKEGON FUEL OIL

MUSKEGON, Mich., July 19.—The first boat shipment of fuel oil from the Muskegon harbor, which was announced for the week of June 23, has been postponed until this week, according to officials at the Old Dutch Refining Co.

About 16,000 bbls. of fuel oil will be included in the shipment which will be loaded at the Simrall Pipe Line Corp. dock at North Muskegon by the Old Dutch Refining Co.

The refinery has the fuel oil on hand from its runs of Dundee crude oil produced in the Muskegon Field. The plant is running about 2,000 bbls. daily and a like amount of crude oil is being run from the field through the Old Dutch and Simrall corporation gathering line system. About 800 bbls. of crude daily is being run to the H. H. Cross Co. refinery in the field and the Standard Oil Co. of Indiana is running another 700 bbls. a day for an average daily production of 3,500 bbls. or more.

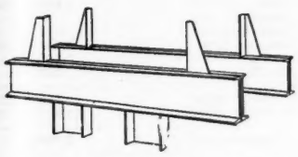
BARNSDALL BLENDING PLANT

CHICAGO, July 19.—Through the completion of its new plant for the blending of Ethyl Gasoline at its Wichita, Kans., refinery, the Barnsdall Refining Co. will be in position to ship its Super Ethyl Gasoline to many of its customers in Kansas and the Middle West at much more favorable freight rates. The Okmulgee, Okla., refinery will continue to blend Ethyl Gasoline and shipments can be made from whichever source is most advantageous to the customer.

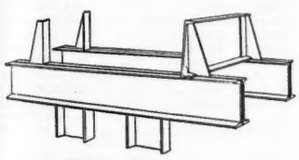
NEWFOUNDLAND IMPORT TAX

Gasoline imported into Newfoundland formerly admitted free is now being taxed 5 cents a gallon. The tax became effective under a new tariff provision. Provision is made for a drawback of the duty paid on gasoline imported by bona-fide fishermen for use in motor boats engaged in fishing.

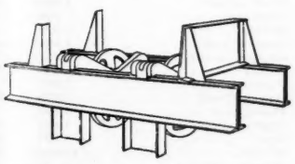
The simplest Crown Block assembly



The main beam with tie beam braces, and bumper supports assembled, are taken up and placed at one side of the water table, so that the remainder of the parts may pass through the water table opening, the main beams may be taken up as assembled units, or piece by piece and assembled on top of the rig as circumstance requires.



One of the upper tie beams is then taken up and bolted in place.



The lower casing line sheave assemblies are then both bolted in place. These may be taken up assembled or one piece at a time, and assembled on top of the rig.

The remaining upper tie beam and the bumper beams are then taken up and bolted in place.

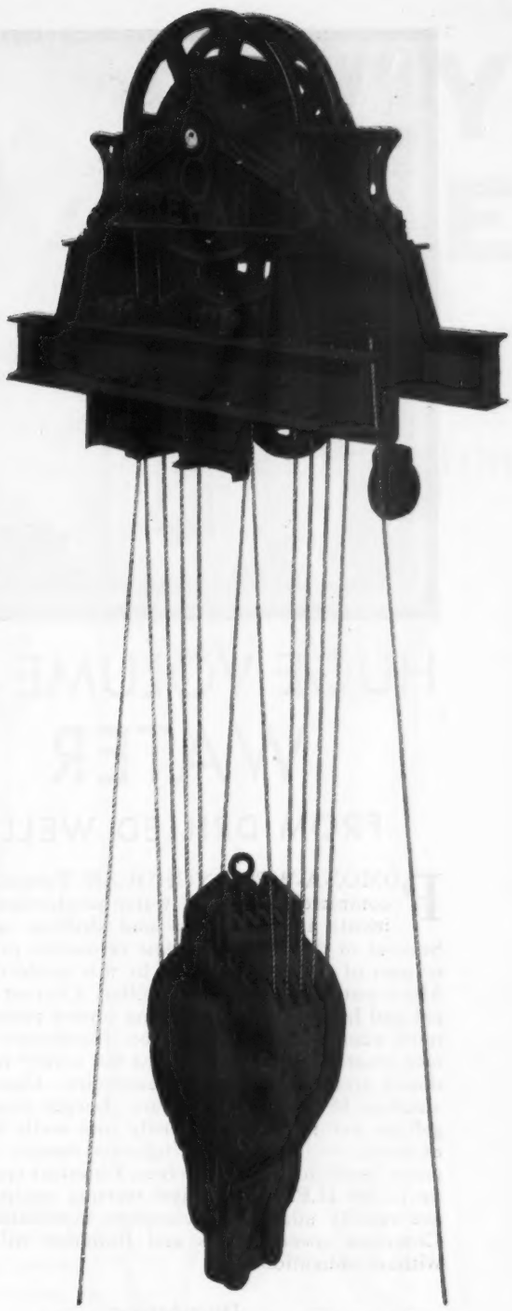
You can assemble the Regan Block in less time and with less labor. You can make replacement of any part at the derrick quickly, saving time and money. The sheaves and bearings in Regan Types A and B blocks are interchangeable. All bearings can be quickly lubricated without coming in close contact with the moving sheaves. An extra sheave may be added, after the block has been in service, (if originally installed with these large top sheaves.)

For simplicity the Regan is outstanding.

For durability, Regan is unsurpassed.

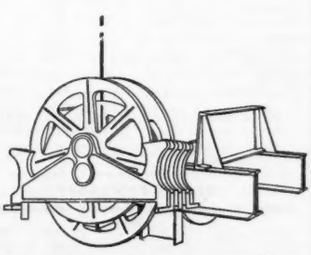
No Regan block has ever been junked.

Catalog Bulletins now ready.

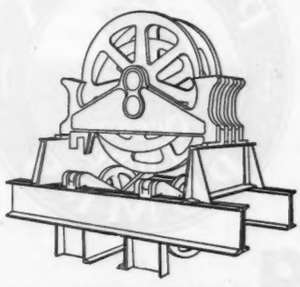


Type B 6-sheave Crown Block and Type 3B 5-sheave Traveling Block with 10-line string-up.

REGAN CROWN BLOCK



The upper sheave assembly is then taken up at one side and hung on the gin pole. This may also be taken up one piece at a time and assembled in place.



The whole assembly is then moved over to the center of the water table, and the upper sheave beam assembly is lowered and bolted in place.

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INDUSTRY HAS BETTER GRASP ON SITUATION

(Continued from Page 103)

	Daily av. (bbls.)	Month (bbls.)
Beckham County:		
Sayre	89	2,759
Marshall County:		
Madill	1,083	33,573
Total May	664,113	20,587,503
Total April	651,377	19,541,310
Difference	12,736	1,046,193

KANSAS
Daily Average and Monthly Production in May

	Daily av. (bbls.)	Month (bbls.)
Sedgwick County:		
Wright	16,435	509,485
Greenwich	2,659	82,429
Robbins	368	11,408
Miscellaneous	845	26,195
Total	20,307	629,517
Marion County:		
Florence-Urschel	474	14,694
Peabody	794	24,614
Covert-Sellers	415	12,865
Lost Springs	599	18,569
Davis	813	25,203
Total	3,095	95,945
Butler County:		
Elbing	2,010	62,310
Potwin	452	14,012
Cameron-Robinson	725	22,475
Wilson-Dunkle	1,531	47,461
Towanda	1,731	53,661
Fox-Bush	916	28,396
Nuttle-Koogler	3,055	94,705
Eldorado	6,830	211,730
Smock	201	6,231
Leon-Weaver	3,982	123,442
North Augusta	836	25,916
South Augusta	1,174	36,394
Sluss	525	16,275
Douglass	96	2,976
Keighly	461	14,291
Benton	42	1,302
Blankenship	826	25,606
Total	25,393	787,183
Greenwood and Woodson Counties:		
Sallyards	1,016	31,496
Teeter-Pixley-Scott	4,075	126,325
Virgil	5,666	175,646
Thrall-Burkett	1,121	35,061
Seeley	7,370	228,470
Polhamus	703	21,793
Miscellaneous	769	23,839
Total	20,730	642,630
Cowley County:		
Rainbow Bend	1,788	55,428
Slick	473	14,663
Graham	296	9,176
Rock	151	4,681
Clark	101	3,131
Eastman	306	9,486
Winfield-New Salem	1,898	58,838
Miscellaneous	911	28,241
Total	5,924	183,644
McPherson County:		
Ritz	5,128	158,968
Voshell	21,636	670,716
Miscellaneous	150	4,650
Total	26,914	834,334
Other counties:		
Rooks	56	1,736
Sumner	9,048	280,488
Rice	766	23,746
Russell	3,909	121,179
Reno	24	744
Harvey	12	372
Trego	17	527
Coffey	283	8,773
Chautauqua	2,795	86,645
Elk	1,799	55,769
Wilson	154	4,774
Montgomery	1,140	35,340
Allen	485	15,035
Neosho	500	15,500
Lyon	699	21,669
Miami	1,206	37,386
Franklin	329	10,199
Douglas	12	372
Bourbon	82	2,542
Linn	172	5,332
Anderson	1,586	49,166
Labette	27	837
Chase	20	620
Woodson	851	26,381
Total May	128,335	3,978,385
Total April	124,475	3,734,253
Difference	3,860	244,132

TEXAS PANHANDLE
Daily Average and Monthly Production in May

Hutchinson	22,573	699,763
Carson	9,231	286,161
Gray	73,497	2,278,407
Moore	442	13,702
Wheeler	611	18,941
Potter	11	341
Total May	106,365	3,297,315
Total April	94,532	2,835,960
Difference	11,824	441,355

NORTH TEXAS
Daily Average and Monthly Production in May

Field and county—	(bbls.) Daily av.	(bbls.) Month
Burkburnett	8,302	257,362
Electra	11,166	346,146
Iowa Park-K.M.A.	5,680	176,080
Archer County	19,165	594,115
Clay County	882	27,342
Wilbarger County	24,046	745,426
Montague County	6,857	212,567
Young County	20,549	637,019
Baylor County	1,295	40,145
Cook County	3,584	111,104
Foard County	195	6,045
Total May	101,721	3,153,351
Total April	101,786	3,053,580
Difference	65	81,771

CENTRAL TEXAS
Daily Average and Monthly Production in May

Runnells	14	434
Coleman	3,629	112,499
Comanche	156	4,836
Stephens	6,041	187,271
Eastland	5,436	168,516
Brown	6,543	202,833
Callahan	3,852	119,412
Throckmorton	1,062	32,922
Jack	3,495	108,345
Haskell	59	1,829
Palo Pinto	643	19,933
Shackelford	6,741	208,971
Jones	1,387	42,997
Erath	238	7,378
Total May	39,296	1,218,176
Total April	40,684	1,220,510
Difference	1,388	2,334

WEST TEXAS
Daily Average and Monthly Production in May

Bennett, Ward	167	5,166
Big Lake, Reagan	16,096	498,998
Chalk-Settles, Glasscock and Howard	35,637	1,104,756
Church, Fields, Crane	21,771	674,886
Hendricks, Winkler	72,542	2,248,817
McCamey-Taylor, Upton	8,172	253,326
McCamey-Taylor, Crane	799	24,797
McElroy, Crane	13,936	432,011
Skelly, Reagan	193	5,970
Ira, Scurry	24	756
Powell, Crockett	1,730	53,621
Yates, Crockett	379	11,754
Stephens, Fisher	1,566	48,536
Westbrook-Iatan, Mitchell	2,160	66,950
Wheat, Loving	1,394	43,225
Yates, Pecos	112,421	3,485,039
Hazlett, Ward	328	10,161
O'Brien-Hutchings, Ward	1,337	41,440
Grand Falls, Ward	63	1,938
Mertzon, Irion	132	4,078
Pecos Valley, Pecos	197	6,109
Penn, Ector	14,334	444,352
Taylor-Link, Pecos	4,267	132,274
Taylor, Taylor	109	3,383
Toborg, Pecos	1,887	58,496
Waddell, Crane	29	892
Total May	311,668	9,661,721
Total April	314,560	9,436,801
Difference	2,892	224,920

GULF COAST
Daily Average and Monthly Production in May

Southeast Texas

Allen	34	1,065
Barbers Hill	20,137	624,237
Batson	1,219	37,780
Big Creek	3,880	120,288
Blue Ridge	1,892	58,652
Brenham	146	4,515
Boling	1,095	33,938
Clay Creek	1,640	50,825
Damon Mound	662	20,527
DeWalt	11,942	370,211
Fannett	1,082	33,544
Goose Creek	4,430	137,354
Hankamer	1,598	49,550
High Island	1,515	46,965
Hull	9,990	309,675
Humble	16,488	511,135
Jasper County	20	630
Lost Lake	793	24,583
Markham	320	9,924
Nash	302	9,344
North Dayton	582	18,044
Orange	2,386	73,962
Orchard	1,835	56,875
Pierce Junction	9,430	292,324
Port Neches	1,677	52,009
Raccoon Bend	11,884	368,415
Refugio	37,265	1,155,213
Esperson (Sheeks)	2,782	86,227
Saratoga	1,048	32,488
Sour Lake	2,372	73,537
South Liberty	4,433	137,425
Spindletop	16,812	521,194
West Columbia	5,747	178,156
Total May, S.E. Texas	177,439	5,500,589
Total Apr., S.E. Texas	177,633	5,329,015
Difference	195	171,584

South Louisiana

Anse La Bute	37	1,147
Bayou Blue	77	2,379
Bayou Bouillon	200	6,214
Black Bayou	243	7,533
Edgerly	531	16,463
Jennings	819	25,401
Hackberry	3,396	105,287
Lake Barre	852	26,410
Lake Pelto	199	6,167

(Continued on Next Page)

	Daily av. (bbls.)	Month (bbls.)
Lockport	2,798	86,747
Port Barre	2,207	68,424
Sorrento	159	4,940
Starks	466	14,454
Sulphur	5,282	163,723
Sweet Lake	107	3,307
Vinton	3,924	121,655
Welsh	163	5,049
White Castle	512	15,869
Total May South La.	21,972	681,141
Total Apr., South La.	21,702	651,052
Difference	270	30,089
Total May, Gulf Coast.	199,411	6,181,740
Total Apr., Gulf Coast..	199,335	5,980,057
Difference	86	201,683

SOUTHWEST TEXAS
Daily Average and Monthly Production in May

Branyon	24	747
Bruner	20,134	624,163
Buchanan	255	7,905
Dale	348	10,793
Darst Creek	22,422	695,067
Kingsville	113	3,490
Larremore	31	974
Luling	9,804	303,918
Lytton Springs	862	26,734
Manford	506	15,675
McMullen County	35	1,085
Medina County	21	682
Mirando	10,440	323,634
Pettus	3,022	93,679
Somerset	1,575	48,812
Yoast	513	15,915
Taylor	488	15,132
Total May	70,593	2,188,405
Total April	63,111	1,893,330
Difference	7,482	295,075

EAST CENTRAL TEXAS
Daily Average and Monthly Production in May

Boggy Creek	3,615	112,060
Cedar Creek	47	1,465
Currie	357	11,063
Hill County	13	405
Mexia	4,273	132,467
Minerva	567	17,572
Nigger Creek	211	6,535
Powell	5,832	180,799
Richland	236	7,325
Thrall	42	1,294
Van	22,493	697,276
Wortham	846	26,240
Total May	38,532	1,194,501
Total April	34,352	1,030,572
Difference	4,180	163,929

ARKANSAS
Daily Average and Monthly Production in May

El Dorado	4,055	125,705
Smackover, light	5,033	156,643
Smackover, heavy	36,591	1,134,321
Stephens	945	29,295
Nevada County	957	29,667
Lisbon	1,006	31,186
Bradley	78	2,418
Champagnolle	3,914	121,334
Mount Holley	115	3,565
Urbana	831	25,761
Total May	53,545	1,659,895
Total April	57,482	1,724,460
Difference	3,937	64,565

NORTH LOUISIANA
Daily Average and Monthly Production in May

Caddo, light	8,975	278,225
Caddo, heavy	2,626	81,406
Homer	3,593	111,383
Haynesville	4,569	141,639
DeSoto-Red River	3,111	96,441
Elm Grove	407	12,617
Bellevue	653	20,243
Cotton Valley	2,190	67,890
Urania	5,262	163,122
Pleasant Hill	635	19,685
Zwolle	3,390	105,090
Sarepta-Carterville	3,377	104,687
Holly	991	30,721
Total May	39,779	1,233,149
Total April	41,950	1,258,500
Difference	2,171	25,351

WYOMING
Daily Average and Monthly Production in May

Mule Creek	742	23,002
Big Muddy	2,021	62,651
Byron	15	465
Oregon Basin	4,226	131,006
Elk Basin	813	25,203
Ferris	62	1,922
Grass Creek	2,016	62,496
Hamilton	889	27,559
LaBarge	2,024	62,744
Lance Creek	138	4,278
Lost Soldier	3,071	95,201
Osage	941	29,171
Poison Spider	1,146	35,526
Rock Creek	2,095	64,945
Lander	679	21,049
Salt Creek	29,362	910,222
Simpson Ridge	68	2,108
Teapot Dome	34	1,054
Dutton Creek	151	4,681
Total May	50,493	1,565,283
Total April	50,931	1,527,930
Difference	438	37,353

MONTANA
Daily Average and Monthly Production in May

	Daily av. (bbls.)	Month (bbls.)
Pondera	2,442	75,702
Cat Creek	1,166	36,146
Kevin-Sunburst	6,142	190,402
Lake Basin	62	1,922
Total May	9,812	304,172
Total April	9,947	298,410
Difference	135	5,762

COLORADO
Daily Average and Monthly Production in May

Craig	902	27,962
Fort Collins	1,379	42,749
Florence	616	19,096
Iles	1,011	31,341
Tow Creek	407	12,617
Miscellaneous	110	3,410
Total May	4,425	137,175
Total April	4,453	133,590
Difference	28	3,585

NEW MEXICO
Daily Average and Monthly Production in May

Artesia	716	22,196
Cap Rock (Maljamar)	890	27,590
Lea City	6,018	186,558
Hobbs	7,314	226,734
Jal	1,408	43,648
San Simon	426	13,206
Rattlesnake	755	23,405
Table Mesa	106	3,286
Hogback	386	11,966
Total May	18,019	558,589
Total April	12,496	374,880
Difference	5,523	183,709

EASTERN FIELDS

(Continued from Page 62)

Co. is moving in tools for its test on the Luke B. Adkins farm in Union district. In this same district, E. R. Cameron has a rig standing for his No. 1 on the Julia A. Breedlove farm.

In Marion County there are two rigs up for tests, both in Paw Paw district. Victor Tennant has built one on the Minnie S. Price farm and Harry L. Tennant has one on the Augustus Mercer heirs farm.

In Marshall County the Myers Oil Co. has a rig standing for a test on the C. M. Strickland farm in Sandhill district.

Monongalia County

In Monongalia County there is but one new rig reported. In Clay district the Moore Tex Oil Co. is rigging up on the Amy Tennant farm. In Pleasants County, McKim district, Sud Powell has a rig up for the No. 1 George Reed.

In Ritchie County, David French and others has a rig ready on the B. F. Gilmore farm, Grant district, and in the same district J. F. Deem and others has a rig on the W. W. Lawrence for his No. 1.

In Roane County there are quite a few new rigs. Godfrey L. Cabot has a rig for the F. S. Means No. 1 in Center district. In Smithfield district there are two tests drilling, the I. L. Starts and others' well on the C. O. Boggs farm at 800 feet and the Union Gas Corp.'s well on the W. T. Epling farm at 900 feet. In Spencer district, Paul Weekly and others have a rig up on the Gay M. Sergent farm for their No. 1. In Reedy district the Heck Oil Co. is drilling their test of the A. W. Thorn farm at 300 feet.

In Wetzel County, the Shimwell Oil & Gas Co.'s test on the W. J. Price farm, Grant district, is shut down with the tools in the hole at 3,053 feet.

In Wood County the Four States Oil Co. is rigged up and waiting on water for its test on the John Roberts farm in Walker district. In Williams district of this county the McKinley Oil Co. is drilling at 600 feet in its test on the J. M. Hively farm.

SOUTHWEST PENNSYLVANIA

There are but two completions reported from Southwest Pennsylvania and they added nothing to production. In Perry Township, Greene County, the Peoples Natural Gas Co. drilled its test on the Driver Fox farm deeper to the Bayard sand at 3,350 feet and it is dry. In Greene Township of this county the Philadelphia Gas Co. encountered no better luck in drilling No. 2 on the Jasper C. Morris farm deeper to the Bayard at 3,161 feet. It also is dry.

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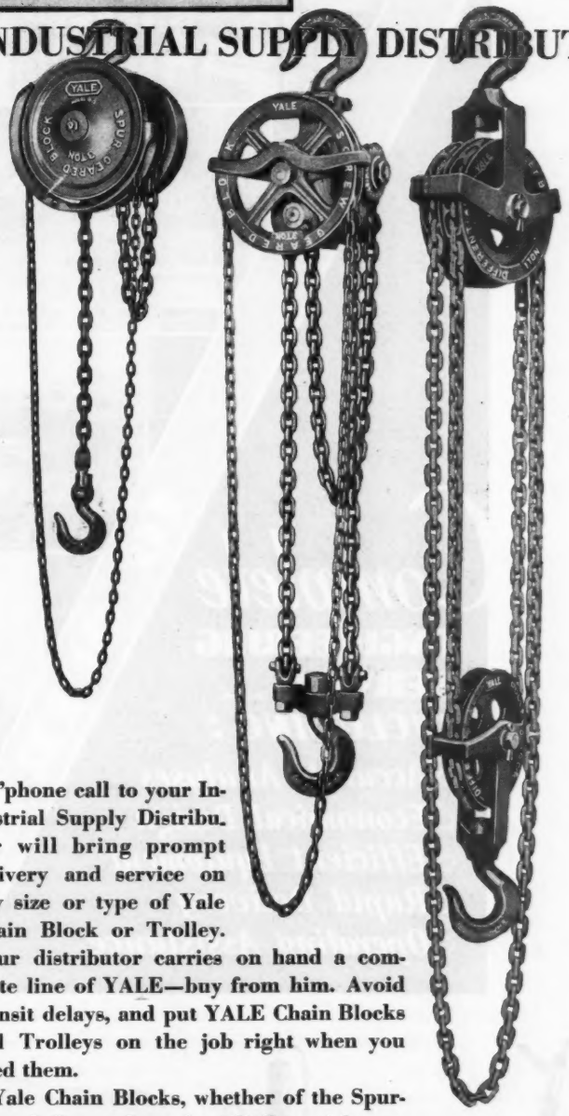

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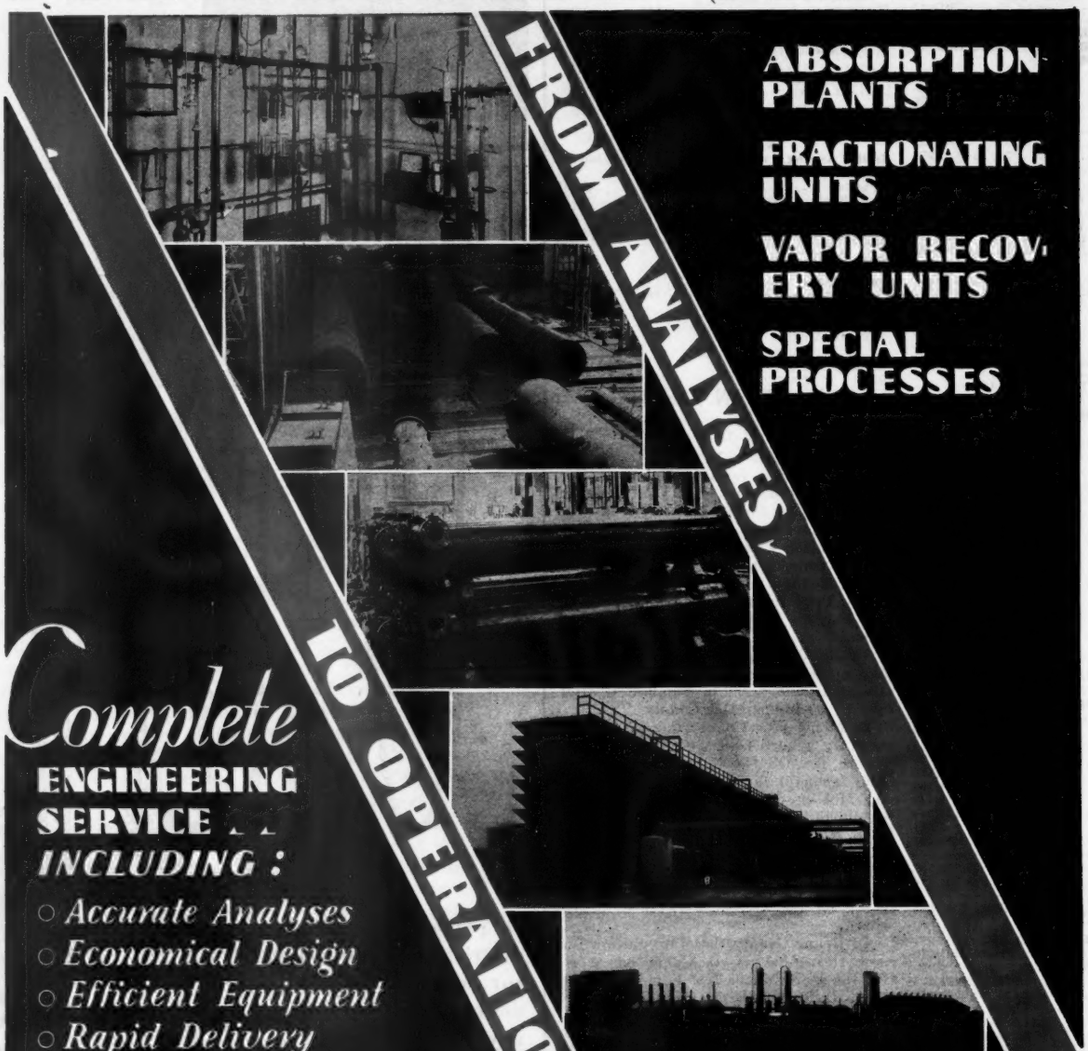


NEW YORK DALLAS HOUSTON LOS ANGELES

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 50)

The Texas Co.'s No. 13 Wilkinson, 330 ft. S, 330 ft. W, NE cor., Sec. 36-23-12 ..... Drlg. 1,520 ft.

Tippett Drlg. Co.'s No. 3 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-12 ..... 300 ft. oil in hole; waiting on power; T.D. 3,180 ft.

Woodley et al's No. 1 Roberson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 22-23-12 ..... Surface csg. collapsed; W.O; T.D. 1,500 ft.

BOSSIER PARISH—SLIGO

La. Gas & Fuel Co.'s No. 4 Skannal, 3,300 ft. E, 660 ft. S, NW cor., Sec. 13-17-12 ..... Location.

La. G. & F. Co.'s No. 7 Thigpen & Herold, 660 ft. N, 660 ft. E, SW cor., Sec. 19-17-11 ..... Drlg. hard lime 2,839 ft.

Woodley Pet. Co.'s No. 1 Schuler, 660 ft. N, 660 ft. E, SW cor. NW, Sec. 13-17-12 ..... Drlg. 2,100 ft.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16 ..... Location.

Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,810 ft. S, 970 ft. E, NW cor., Sec. 17-16-16 ..... Location.

Calatex O. & G. Co.'s No. 1 Hudson, 2,395 ft. N, 660 ft. E, SW cor., Sec. 8-16-16 ..... Location.

Calatex O. & G. Co.'s No. 2 Taylor-Trosper, 45 ft. N, 1,220 ft. E, SW cor., Sec. 8-16-16 ..... Began drlg. July 15.

CADDO PARISH—MOORINGSPORT

Falcon Oil Co.'s No. 1 Miller, 1,020 ft. N, 1,320 ft. E, SW cor., Sec. 29-20-15 ..... Rig up.

Falcon Oil Co.'s No. 4 Muslow, 200 ft. W, 1,270 ft. S, NE cor., Sec. 29-20-15 ..... Location.

Falcon Oil Co.'s No. 4 Nunnally, 3,004 ft. N, 3,150 ft. E, SW cor., Sec. 29-20-15 ..... W.O.S.R; 300 ft. oil; T.D. 2,340 ft.

Gulf Ref. Co.'s No. 1 Leonard fee, 3,623 ft. N, 2,486 ft. E, SW cor., Sec. 29-20-15 ..... Cmtd. 10-in. 60 ft; drlg. 930 ft.

The Texas Co.'s No. 4 Leonard fee, 1,520 ft. W, 200 ft. S, NE cor., Sec. 29-20-15 ..... Began drlg. July 9; cmtd. 12½-in. 43 ft; 8-in. 2,025 ft.

The Texas Co.'s No. 5 Leonard fee, 2,440 ft. W, 200 ft. S, NE cor., Sec. 29-20-15 ..... Derrick.

CADDO PARISH—OIL CITY

The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16 ..... Location.

CADDO—PINE ISLAND

Shreveport Oil Corp.'s No. 6 Hicks et al, 880 ft. N, 1,360 ft. W, SE cor. NE NW, Sec. 32-21-15 ..... Began drlg. July 10; cmtd. 10-in. 40 ft.; drlg. 700 ft.

LA SALLE PARISH—URANIA

W. O. Clark's No. 1-B Russell, Sec. 25-10-1e ..... Cmtd. 6⅝-in. 1,535 ft; W.O.S.R. 1,550 ft.

Montugu Oil Co.'s No. 8 Zenoria Lbr. Co., 710 ft. S, 250 ft. W, NE cor., Sec. 10-9-1e ..... Cmtd. 6⅝-in. 1,499 ft; W.O.S.R; 700 ft. oil; 700 ft. S.W.; T.D. 1,510 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4 ..... Location.

J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor., Sec. 18-20-5 ..... D.S. test 3,263 ft; S.W; drlg. 3,400 ft.

Industrial Gas Co.'s No. 1 fee, 1,980 ft. S, 660 ft. W, NE cor., Sec. 3-20-4 ..... Cmtd. 6-in. 2,095 ft.

La. G. & F. Co.'s No. 1 Archie, 627 ft. S, 1,957 ft. E. NW cor. SW, Sec. 22-20-4 ..... Began drlg. July 6; cmtd. 12½-in. 160 ft.

La. G. & F. Co.'s No. 26 Crossett, 645 ft. E, 574 ft. S, NW cor. Lot 9, Sec. 33-21-5 ..... Drlg. gas rock 2,271 ft.

Southern Carbon Co.'s No. 56 fee, 660 ft. S, 660 ft. E, NW cor. NW, Sec. 15-20-4 ..... Drlg. 1,500 ft.

OUACHITA PARISH

Amalgamated Co.'s No. 1-B Kate Cole, 660 ft. N, 660 ft. E, SW cor. NE SW, Sec. 25-20-4 ..... Rig up.

Carbon Cons., Inc.'s No. 5 Guthrie (was United Oil & Nat. Gas Co.'s No. 5 Guthrie), 6,634 ft. N, 7,078 ft. W. cor. Secs. 49, 25 and 26, in Sec. 50-20-4 ..... Drlg. 735 ft.

Hope Prod. Co.'s No. 4 Fairbanks, 616 ft. W, 623 ft. S, NE cor., Sec. 36-20-4 ..... Cmtd. 6-in. 2,247 ft.

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4 ..... Location.

Jordan Drlg. Co.'s No. 1 J. P. Parker, 950 ft. N, 485 ft. W, cor. Secs. 41, 9 and 16, in Sec. 41-18-4 ..... Location.

Jordan Drlg. Co.'s No. 2 Pereboom, 1,207 ft. W, 264 ft. S, C, Sec. 9-18-4 ..... Drlg. 2,108 ft.

Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4 ..... Location.

La. G. & F. Co.'s No. 3 Breard, S 9° 734 ft., S 81° E 594 ft., NW cor., Sec. 44-18-4 ..... Drlg. 1,895 ft.

Pipes & Mack's No. 1 Union Gas Products Co., Inc., 1,598 ft. W, 297 ft. N, SE cor. SW, Sec. 7-18-5 ..... Tested dry 2,460 ft; W.O. 2,500 ft.

Pipes & Mack's No. 2 Union Gas Products Co., 296 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5 ..... Location.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E. NW cor., Sec. 27-19-4 ..... Location.

United O. & N. G. Co.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig moved; derrick.

Franklin O. & G. Co.'s No. 1 Thompson, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6 ..... Location.

Hope Prod. Co.'s No. 1 A. H. Brown, 1,932 ft. N, 1,009 ft. W, SE cor., Sec. 22-16-6 ..... Began drlg. July 10; cmtd. 12¼-in. 186 ft; 8-in. 924 ft.

Hope Prod. Co.'s No. 1 J. E. Duff, 660 ft. N, 1,980 ft. W, SE cor., Sec. 15-16-6 ..... Rig up.

International Gas Prod. Co.'s No. 1 Minnie LaGrone, 769 ft. N, 858 ft. E, SW cor., Sec. 7-16-7 ..... Location.

La. Gas & Fuel Co.'s No. 1 Etheridge, 1,412 ft. S, 770 ft. E, NW cor. NE, Sec. 28-17-6 ..... Location.

La. G. & F. Co.'s No. 1-C McCoy, 872 ft. W, 1,749 ft. N, SE cor., Sec. 8-16-6 ..... Drlg. 1,367 ft.

Northern La. Nat. Gas Co.'s No. 2 L. R. Hemler, 1,990 ft. E, 663 ft. N, SW cor. NW, Sec. 23-16-6 ..... Derrick.

Northern La. Nat. Gas Co.'s No. 1 McKay, 681 ft. W, 559 ft. N, SE cor. SW, Sec. 22-16-6 ..... Location.

Palmer Corp.'s No. 1-B Boykin, 177 ft. S, 787 ft. E, C, Sec. 33-17-6 ..... Derrick.

Palmer Corp.'s No. 1 Brown, 1,320 ft. S, 659 ft. W, NE cor. NW NE, Sec. 27-16-6 ..... Began drlg. July 10; cmtd. 12½-in. 158 ft; killing fresh wtr. flow at 513 ft.

Palmer Corp.'s No. 1 Hill, 1,320 ft. S, 660 ft. E. NW cor. SW, Sec. 31-16-6 ..... Rig up.

Palmer Corp.'s No. 1 Newberry, 3,296 ft. N, 2,640 ft. W, SE cor., Sec. 2-16-6 ..... Cmtd. 6-in. 2,300 ft.

Palmer Corp.'s No. 1 N. D. Thomason, 1,320 ft. S, 660 ft. E, NW cor. NW, Sec. 22-16-6 ..... Arranging test 2,450 ft.

Richland Prod. Co.'s No. 1 Brown, 1,179 ft. S, 792 ft. W, NW cor. NE SE, Sec. 22-16-6 ..... Drlg. 2,250 ft.

Richland Prod. Co.'s No. 1 Hale, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 22-16-16 ..... Rig up.

Southern Carbon Co.'s No. 1-B Hallock, 1,622 ft. N, 990 ft. W, SE cor. NW, Sec. 1-16-6 ..... Began drlg. June 12; cmtd. 12-in. 185 ft., 8-in. 865 ft.

Southern Carbon Co.'s No. 1-B Hemler, 660 ft. N, 1,435 ft. E, SW cor., Sec. 1-16-6 ..... Location.

Southern Carbon Co.'s No. 1-C M. L. McCoy, 1,880 ft. N, 2,871 ft. E, SW cor., Sec. 1-16-6 ..... Cmtd. 6-in. 2,300 ft.

Southern Carbon Co.'s No. 2-C M. L. McCoy, 1,880 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6 ..... Location.

Southern Carbon Co.'s No. 5 F. B. and E. A. Sartor, 1,156 ft. E, 531 ft. S, NW cor. SW, Sec. 19-16-6 ..... Drlg. 2,066 ft.

Southern Carbon Co.'s No. 6 F. B. and E. A. Sartor, 2,640 ft. N, 2,031 ft. W, SE cor., Sec. 24-16-5 ..... Location.

Southern Carbon Co.'s No. 1-C T. R. Sartor, 660 ft. S, 660 ft. W, NE cor., Sec. 29-16-6 ..... Cmtd. 6-in. 2,300 ft.

Southern Carbon Co.'s No. 1 H. L. Thomason, 1,980 ft. S, 665 ft. E, NW cor., Sec. 11-16-6 ..... Location.

Southern Carbon Co.'s No. 1-B Thomason et al, 2,310 ft. W, 100 ft. S, NE cor., Sec. 23-16-6 ..... Began drlg. July 13; cmtd. 12-in. 196 ft.

Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 1,400 ft. W, SE cor., Sec. 14-16-6 ..... Location.

Southern Carbon Co.'s No. 1-D Thomason, 1,320 ft. S, 660 ft. W, NE cor., Sec. 31-16-6 ..... Location.

United Carbon Co.'s No. 1 E. W. Dunning, 1,270 ft. S, 660 ft. W, NE. cor., Sec. 26-16-6 ..... Drlg. 2,335 ft.

United Carbon Co.'s No. 1 R. B. McGowan, 665 ft. E, 660 ft. S, NW cor. SW, Sec. 16-17-6 ..... Drlg. 1,870 ft.

United Carbon Co.'s No. 1 H. L. Thomason, 660 ft. N, 660 ft. E. SW cor., Sec. 2-16-6 ..... Cmtd. 6-in. 2,300 ft.

United Carbon Co.'s No. 1-A J. M. Thomason, 2,032 ft. N, 3,338 ft. W, SE cor., Sec. 22-16-6 ..... Location.

SABINE PARISH—PLEASANT HILL

Ark. Fuel Oil Co.'s No. 14 Logan, 1,035 ft. N, 241 ft. W, C, Sec. 33-10-12 ..... Drlg. 2,011 ft.

J. M. Bridges, trustee's No. 1 Cook Land Co., Sec. 34-10-12 ..... Drlg. 1,400 ft.

Bridges-Clark Oil Co.'s No. 2 J. W. Guy, 330 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33-10-12 ..... W.O.S.R. 3,194 ft.

F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, NW cor., Sec. 27-10-12 ..... Began drlg. July 13; cmtd. 12-in. 110 ft.

Standard Oil Co.'s No. 2 Ives, 330 ft. N, 330 ft. E. SW cor. SE SW, Sec. 34-10-12 ..... Coring lime 3,290 ft.

SABINE PARISH—ZWOLLE

Central Pet. Co.'s No. 1 Baptist Church (was No. 1 Wall), Zwolle townsite in Sec. 31-8-12 ..... Bailed dry; W.O. 2,590 ft.

Tom Davis' (was T. D. Allison's) No. 1 Holliday, Sec. 31-8-12, Zwolle townsite ..... S.D. wtr. 1,350 ft.

Glassell & Merren's No. 1 Thomas, Lot 13, Blk. 3, Zwolle townsite, Sec. 31-8-12 ..... Oil show; S.D.; W.O. 2,600 ft.

H. E. Granville's No. 1 Parrott, 1,052 ft. S, 661 ft. E, NW cor., Sec. 31-8-12 ..... W.O.S.R. 2,520 ft.

F. M. Hood's No. 1-B (was No. 2) Winston, 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle townsite ..... S.D. 1,065 ft.

Lide et al's No. 3 Sabine Lbr. Co., 300 ft. N, 360 ft. E, SW cor. NE SE, Sec. 31-8-12 ..... Rig up.

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 4 Bowman-Hicks, 330 ft. N, 330 ft. W, C, Sec. 34-8-12 ..... T.A. 2,669 ft.

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 5 Bowman-Hicks, 900 ft. S, 1,400 ft. W, C, Sec. 34-8-12 ..... Cored hard broken lime 4,055 ft.

Loring Oil Co.'s No. 8 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SE, Sec. 33-8-12 ..... Cored hard chalk 2,593 ft.; T.A. 2,700 ft.

Loring Oil Co.'s No. 10 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. NE SE, Sec. 33-8-12 ..... Drlg 2,432 ft.; drlg. chalk 2,497 ft.

Loring Oil Co.'s No. 11 Bowman-Hicks, Sec. 34-8-12 ..... Cmtd. 6⅝-in. 2,330 ft.; T.D. 2,382 ft.

Loring Oil Co.'s No. 1 Gardner, 330 ft. N, 330 ft. W, SE cor. NE, Sec. 27-8-12 ..... Cmtd. 6⅝-in. 2,310 ft.; T.D. 2,327 ft.

Loring Oil Co.'s No. 2 Sabine Lbr. Co., 1,430 ft. E, 340 ft. N, C, Sec. 34-8-12 ..... Derrick.

Loring Oil Co.'s No. 1 Schull, 330 ft. S, 330 ft. E. NW cor. SW, Sec. 26-8-12 ..... Drlg. hard chalk 2,510 ft.

Ohio Oil Co.'s No. 5 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor., Sec. 33-8-12 ..... Cmtd. 6⅝-in. 2,401 ft.

Olson Bros.' No. 2 Boone-Ferguson, 330 ft. N, 330 ft. W, SE cor. NW SE, Sec. 33-8-12 ..... Cmtd. 6⅝-in. 2,286 ft.

W. D. Perritt et al's No. 1 Elliott, 150 ft. N, 150 ft. E, SW cor. SW SE SW, Sec. 30-8-12 ..... Began drlg. July 12; cmtd. 10-in. 102 ft.; drlg. 794 ft.

Philp Bros.' No. 1 Dow, Lot 1, Blk. 18, Zwolle townsite, Sec. 31-8-12 ..... Bailed dry 2,300 ft.; S.D.

Posey et al's No. 1 Peterson, Blk. 16, Zwolle townsite, Sec. 31-8-12 ..... S.D. 250 ft.

Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. W, NE cor., Sec. 4-7-12 ..... T.A. 2,640 ft.

Ruston Drlg. Co.'s No. 1-A Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SW, Sec. 35-8-12 ..... T.A. 2,690 ft.

A. H. Tarver's No. 3 Sabine State Bank, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 26-8-12 ..... Began drlg. July 11; cmtd. 10-in. 85 ft.; drlg.

Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 ..... Cmtd. 6⅝-in. 2,161 ft.; top chalk 2,165 ft.

Wilder et al's No. 1 Parrott, Sec. 31-8-12 ..... Cmtd. 6⅝-in. 2,200 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 8 Bowman-Hicks, Sec. 18-7-13 ..... 1,500 ft. oil 2,494 ft.; arranging to deepen.

R. L. Gay, trustee's No. 5 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. SE NE, Sec. 15-7-14 ..... Location.

Ruston Drlg. Co.'s No. 1-B Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor., Sec. 24-7-14 ..... Tested dry 2,470 ft.; T.A.

UNION PARISH

Greenwood Production Co.'s No. 3 Norsworthy, 1,320 ft. S, 663 ft. E, NW cor., Sec. 9-21-3 ..... Rig up.

Nemours Corp.'s No. 1 Digby, 1,989 ft. E, 660 ft. S, NW cor., Sec. 15-21-3 ..... Drlg. 2,000 ft.

Nemours Corp.'s No. 2 Hollis, 817 ft. S, 995 ft. W, NE cor. NW, Sec. 11-20-3 ..... Location.

Stovall Drlg. Co.'s No. 1 Murray, 1,650 ft. N, 330 ft. W, SE cor. SW, Sec. 32-23-4 ..... Rig up.

J. P. White's No. 1 Howard, 660 ft. S, 660 ft. W, NE cor., Sec. 32-20-3e ..... Cmtd. 6-in. 2,133 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Ideal O. & G. Co.'s No. 1 Coyle, 300 ft. N, 300 ft. E, SW cor. SW SE, Sec. 24-23-11 ..... Derrick.

H. M. Jones Drlg. Co.'s (was E. W. Bateman's) No. 2 Cook, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 2-22-11 ..... Cmtd. 6-in. 2,722 ft.

H. M. Jones Drlg. Co.'s No. 1 Womble, 860 ft. S, 200 ft. E, NW cor. SW, Sec. 1-22-11 ..... Derrick.

K. C. Supply Co.'s No. 1 Cochrane, 330 ft. N, 330 ft. W, SE cor. E½ NW, Sec. 36-23-11 ..... Plugged back to 2,713 ft.; T.D. 2,726 ft.

Liggett et al's No. 1 Slack, 720 ft. E. 150 ft. N, SW cor. SE, Sec. 36-23-11 ..... Location.

Liggett et al's No. 2 Slack, 720 ft. E. 150 ft. N, SW cor. SE SE, Sec. 36-23-11 ..... Location.

Magnolia Pet. Co.'s No. 2 Sally Coyle, 150 ft. N, 150 ft. W, SE cor. SE NE, Sec. 2-22-11 ..... Derrick.

Magnolia Pet. Co.'s No. 4 Scroggins, 150 ft. N, 150 ft. E, SW cor. SW NW, Sec. 1-22-11 ..... Drlg. 2,711 ft.

Merrick Oil Corp.'s No. 3 Slack, 330 ft. N, 330 ft. W, SE cor. SW SE, Sec. 36-23-11 ..... Derrick.

Sarepta Oil Co.'s No. 3 Gardner, 396 ft. N, 78 ft. E, SW cor. NW NW, Sec. 6-22-10 ..... Derrick.

S. H. Riggs, trustee's No. 1 L. & A., 250 ft. S, 530 ft. E, NW cor. NW NE, Sec. 1-22-11 ..... S.D. 2,100 ft.

S. H. Riggs, trustee's No. 2 L. & A., 255 ft. S, 600 ft. W, NE cor. SW NE, Sec. 36-23-11 ..... Derrick.

S. H. Riggs, trustee's No. 3 L. & A., 255 ft. N, 600 ft. W, SE cor. NW NE, Sec. 36-23-11 ..... Location.
S. H. Riggs, trustee's No. 4 L. & A., 255 ft. S, 600 ft. W, NE cor. NW SE, Sec. 36-23-11 ..... Location.
W. O. Neely's No. 1 J. R. Slack, 150 ft. N, 150 ft. E, SW cor., Sec. 12-22-11 ..... Location.
Sarepta Oil Co.'s No. 2 Gardner, NE SW, Sec. 1-22-11 .. Rig up.
Sarepta Oil Co.'s No. 1 Slack, SW cor. NW NE, Sec. 36-23-11 ..... Rig up.
Wingfield et al's No. 2 Slack, 163 ft. S, 140 ft. E, NW cor. NE, Sec. 1-22-11 ..... Cmtd. 6-in. 2,720 ft.
Wingfield et al's No. 3 Slack, 132 ft. S, 760 ft. E, NW cor. NE, Sec. 1-22-11 ..... Cmtd. 6-in. 2,726 ft.

ARKANSAS

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 1 Cline, 660 ft. S, 660 ft. W, NE cor. NE SE, Sec. 16-10-24 ..... Cmtd. 10-in. 2,600 ft.
Conn Grable's No. 1 Hoeing, 720 ft. N, 590 ft. W, SE cor., Sec. 26-9-25 ..... S.D. 2,150 ft.

NEVADA COUNTY

Roy Davis et al's No. 1 Chas. Henry, 1,120 ft. N, 1,120 ft. W, SE cor., Sec. 10-12-20 ..... Rig up.
C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... S.D. 2,810 ft.

OUACHITA COUNTY—SMACKOVER

Standard Oil Co.'s No. 7 Farris, 200 ft. S, 200 ft. W, NE cor. NW NW, Sec. 34-15-15 ..... Rig up.

UNION COUNTY—CHAMPAGNOLLE

Lion Oil Ref. Co.'s No. 2 Kelly, Sec. 9-17-14 ..... O.W.D.D.; completed Apr. 4, 1929; 6,800,000 ft. gas 2,822 ft.; perforated csg. 2,735-60 ft.; arranging 4½-in. csg. 3,166 ft.; cored S.W. sand 3,171-84 ft.; T.D. 3,195 ft.; W.O.S.R.; 600 ft. oil.
Magnolia Pet. Co.'s No. 1 Gregory, Sec. 15-17-14 ..... Coring 2,851 ft.
Sundby et al's No. 2 Perdue, 75 ft. S, 150 ft. E, NW cor., Sec. 33-16-14 ..... S.D. 3,205 ft.

UNION COUNTY—EL DORADO

H. L. Hunt's No. 6 Pratt, 150 ft. N, 330 ft. E, SW cor. NE NE, Sec. 7-18-15 ..... S.W. 2,214 ft.
Malloy & Co.'s No. 1 Murphy, Sec. 1-18-16 ..... Rig up; W.O.
Malloy & Co.'s No. 3 Robertson, NE cor. S½ SW NE, Sec. 6-18-15 ..... Location.

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Agurs, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. ..... Location.
Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. ..... Fishing; T.D. 3,445 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor. Jno. Womack Sur. in B. C. Jordan Sur. ..... Drlg. broken lime 3,610 ft.
Jackson et al's No. 1 Dunham, 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur. .. S.D. title work; T.D. 1,690 ft.
Nat. Gas Products Co.'s No. 3 Tom Moore, 889 ft. E, 7,928 ft. S, NW cor. B. C. Jordan Sur. ..... Drlg. broken lime 3,000 ft.
The Texas Co.'s No. 10 G. W. Brumble, SE cor., E. F. Mitcheson Sur. ..... Rig up.
The Texas Co.'s No. 11 G. W. Brumble, 2,814 ft. N, 700 ft. W, SE cor., E. F. Mitcheson Sur. ..... Location.
Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor. Jno. Womack Sur. in B. C. Jordan Sur. ..... Derrick.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 50)

CONCORDIA PARISH

A. C. Glassell's No. 1 Pittsfield Plantation, N 9°, E 1,320 ft., SW cor., Sec. 41-8-10 ..... Blew out between 1,392-1,450 ft; estimated 1,000,000 ft. gas; bridged; recmt. 8¼-in. 1,370 ft; S.D; T.D. 1,453 ft.
Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e ..... 8-in. stuck at 1,300 ft; set; T.D. 2,820 ft.

DE SOTO PARISH

Ark.-La. P. L. Co.'s No. 2 Johnson, 2,144 ft. N, 1,348 ft. W, C, Sec. 7-11-13 ..... Rig up.
Benson Oil Co.'s No. 1 Harris, Sec. 6-10-13 ..... Tested dry; show gas; W.O. 2,650 ft.
Joe Burnham et al's No. 1 Mary Hood, 320 ft. W, 201 ft. S, NE cor. SE SE NE, Sec. 3-11-14 ..... Drlg. chalk 1,650 ft.
Sam Gold et al's No. 1 Platt, 200 ft. S, 200 ft. W, NE cor. SW, Sec. 23-13-14 ..... Rig up.
Gulf Ref. Co.'s No. 1 Dry, 2,390 ft. N, 200 ft. E, SW cor., Sec. 14-11-15 ..... S.D. waiting for string 10-in.; T. D. 925 ft.
Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11 ..... S.D. 1,060 ft.
Frank Melat, Inc.'s No. 1 Schryver, 175 ft. E. 175 ft. N, SW cor. NW SW, Sec. 35-14-13 ..... Had 50 ft. oil in hole 2,782 ft; bailed dry; coring.
Michlouzanna O. & G. Co.'s No. 1 Payne, 410 ft. S, 398 ft. E, NW cor., Sec. 12-11-16 ..... O.W.D.D; completed by Clark & Melat; milled 6⅝-in. 1,690 ft; arranging to set 4½-in. and packer on top liner 2,030 ft; old T.D. 2,556 ft.
Odell & Lawton's No. 1 Tidwell-Tull, 300 ft. N, 600 ft. E, SW cor. NW, Sec. 11-13-14 ..... S.D. 2,612 ft; title work.
Pelham & Bumby's No. 1 Rhodes, C S½ SE, Sec. 32-13-14. Rig up.
R. O. Roy's No. 1 Nelson, 660 ft. S, 660 ft. E, NW cor., Sec. 36-15-13 ..... Drlg. 2,000 ft.

FRANKLIN PARISH

Davis et al's No. 1 Moore, 600 ft. W, 200 ft. S, NE cor., Sec. 12-11-6 ..... S.D. 1,430 ft.

JACKSON PARISH

El Dorado Chief O. & G. Co.'s No. 1 Sou. Advance Paper Bag Co., 225 ft. N, 275 ft. E, SW cor. SW NE, Sec. 35-15-4 ..... S.D. 1,400 ft.

LINCOLN PARISH

Ark. Fuel Oil Co.'s No. 1 Lewis & Co., 300 ft. N, 300 ft. W, SE cor. NW SE, Sec. 26-20-4 ..... Reaming to bottom; T.D. 4,001 ft.

MOREHOUSE PARISH

Ruston Drlg. Co.'s No. 1 Tucker & Platt, 660 ft. N, 860 ft. W, SE cor. NE, Sec. 8-20-6 ..... Top gas rock 2,436 ft; D.S. test 2,440-52 ft. dry; arranging core and retest; T.D. 2,474 ft.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-8-10 ..... Drlg. gumbo 1,435 ft.
S. D. McDaniel's No. 2 Clark & Morse, 300 ft. E, 350 ft. N, C, Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 3 ft; S.D. for orders; T.D. 2,526 ft.
Robeline O. & G. Co.'s No. 1 Winn, 558 ft. N, 348 ft. E, SW cor. SE, Sec. 7-8-9 ..... S.D. 1,600 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... Drlg. 3,080 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. E, NW cor., Sec. 32-14-10 ..... Tested S.W. and show oil 6 ft. sand 1,700 ft; drlg. shale 2,550 ft.
E. C. Lucas' No. 1 La. Pecan Co., Sec. 26-13-11 ..... Cmtd. 8-in. 785 ft.
Geo. L. Pace et al's No. 1 Clarkson, 200 ft. S, 200 ft. E, NW cor. NE, Sec. 20-12-9 ..... Began drlg. July 14; cmtd. 10-in. 212 ft.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Sec. 13-17-5 ..... Derrick.
Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6 ..... Waiting orders; T.D. 2,657 ft.
Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Tested S.W; W.O. 2,477 ft.
Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-17-6 ..... Location.
Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Derrick.
W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7 ..... Derrick.
Island Gas Co.'s No. 1 Noe, 1,902 ft. N, 660 ft. W, SE cor., Sec. 3-16-5 ..... Rig up.
Palmer Corp.'s No. 1 Seubert, 1,356 ft. N, 88° 35' W, 660 ft., SE cor., Sec. 1-16-5 ..... Cmtd. 10-in. 875 ft; drlg. 1,865 ft.

SABINE PARISH

Ark.-La. P. L. Co.'s No. 1 Whitney, 660 ft. S, 660 ft. E, C, Sec. 28-10-14 ..... Cored sandy shale 2,141 ft.
Boone, trustee's No. 1 J. B. Hill, NE, Sec. 4-6-11 ..... (No check); derrick.
LeGrand Oil Co., Inc.'s No. 1 J. W. Hale, 200 ft. N, 200 ft. E, SW cor. NE NW, Sec. 1-7-13 ..... Location.
Lohman & Walker's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. SE NE, Sec. 21-7-11 ..... Began drlg. July 13; cmtd. 12-in. 82 ft.
Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 31-9-13 ..... Rig up.
Loring Oil Co.'s No. 1 Peavy-Wilson Lbr. Co., 200 ft. S, 330 ft. W, NE cor. SW NE, Sec. 21-6-13 ..... Reaming to bottom; T.D. 4,260 ft.
Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11 ..... Rig up.
J. C. McDaniel & Lieber's No. 1 Batson, 675 ft. N, 318 ft. E, SW cor. SE, Sec. 16-18-12 ..... Show oil; bailed dry; W.O. 2,526 ft.
Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12 ..... S.D. 1,656 ft.
Pelican Nat. Gas Co.'s No. 3 La. Long Leaf Lbr. Co., 200 ft. S, 200 ft. W, NE cor. SW, Sec. 4-7-11 ..... Began drlg. July 12; cmtd. 10-in. 96 ft; drlg. 675 ft.
Pelican Nat. Gas Co.'s No. 3 Sabine Lbr. Co., 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 6-7-11 ..... Rig up.
D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... S.D. 3,280 ft.
H. T. Stacey et al's No. 1 Polly, NE cor. NE NE, Sec. 18-8-12 ..... Rig up.
Teteco Oil Corp.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S, 100 ft. W, NE cor. NW, Sec. 18-6-12 ..... Arranging core; T.D. 4,077 ft.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... Drlg. 2,220 ft.

ARKANSAS

ASHLEY COUNTY

J. D. Marcum Co.'s No. 1 McGarry, 300 ft. W, 100 ft. S, C, Sec. 10-19-4 ..... O.W.D.D; old T.D. 3,300 ft; drlg. 6⅝-in. plug 3,450 ft; broken sand 3,467-3,555 ft.

CALHOUN COUNTY

Tidal Oil Co.'s No. 1 Freeman-Smith Lbr. Co., 150 ft. C S line, NE NW, Sec. 3-16-14 ..... D.S. test 2,092-2,111 ft; dry; drlg.

CLEBURNE COUNTY

Cosden Oil Co.'s of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10 ..... Drlg. slate 3,843 ft.
Donnelly-Craver et al's No. 1 Doniphan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Cmtd. 8¼-in. 1,484 ft; T.D. 1,575 ft.

COLUMBIA COUNTY

S. Y. Dorfman et al's No. 1 Merritt, 923 ft. S, 160 ft. W, NE cor. SE NW, Sec. 25-19-22 ..... Derrick; previously reported drlg. in error.

DREW COUNTY

McClintock & Goodka's No. 1 Ogles, 920 ft. W, 400 ft. S, NE cor., Sec. 35-13-5 ..... S.D; W.O; 2,625 ft.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Edtin, SW cor., Sec. 33-10-26 ... Tested 1,000,000 ft. gas 1,317 ft. and 1,576 ft; show gas and S.W. 2,155 ft; U.R. 10-in. at 2,285 ft; T.D. 2,385 ft.

GARLAND COUNTY

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Drlg. hard gray lime 3,605 ft.

HOT SPRING COUNTY

J. R. Lockhart's No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 (reported in Grant County in error) ..... Derrick.

LAFAYETTE COUNTY

Crawford Drlg. Co.'s No. 1 Vaughn, 200 ft. S, 200 ft. W, NE cor. SE NE, Sec. 25-19-25 ..... Rig up.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGehee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7 ..... Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 ..... Fishing bit and collar; T.D. 2,502 ft.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... U.R. 5 3/16-in. 3,570 ft; T.D. 3,610 ft.

MADISON COUNTY

J. W. Baxter's No. 1 Hallem, C NE SW, Sec. 17-16-26 .... Drlg. 500 ft.

MILLER COUNTY

Lenz et al's No. 1 G. W. Johnson, 400 ft. S, 400 ft. W, NE cor. SW, Sec. 24-15-26 ..... Cmtd. 6⅝-in. 2,844 ft; 5-ft. sand; S.O; T.D. 2,849 ft; S.D.

OUACHITA COUNTY

Anderson & Wimmer's No. 1 Buck, Sec. 7-15-17 ..... Sidetracking D.S; T.D. 2,735 ft.
Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17. Began drlg. June 20; S.D.

PIKE COUNTY

Theo. Davis, trustee's No. 1 Ruth Wilson, 200 ft. S, 200 ft. W, NE cor., Sec. 25-5-26 ..... Fishing 700 ft; S.O.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 J. E. Moore, 330 ft. N, 330 ft. E, SW cor. SE NE, Sec. 16-9-21 ..... Cmtd. 15½-in. 405 ft.
Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-19 ..... Drlg. lime 4,750 ft.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... Tested S.G. 1,508 ft; fishing cable tools; T.D. 1,520 ft.

SEBASTIAN COUNTY

W. M. Greeson's No. 1 Spears, Sec. 9-7-29 ..... Drlg. hard sand 3,165 ft.
Mansfield Gas Co.'s No. 14 Fee, Lot 10, Sec. 1-4-31 ..... Cmtd. 10-in. 330 ft.
Ozark Nat. Gas Co.'s No. 10 Weaver, 660 ft. N, 660 ft. W, SE cor. SE NE, Sec. 27-8-30 ..... Drlg. 1,950 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... Dry 1,987-2,079 ft; fishing 2,157 ft.
Marine Oil Co.'s No. 4-A Thompson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 10-18-13 ..... Drlg. 2,485 ft.
Modisette Drlg. Co.'s No. 4 Union Sawmill, 330 ft. W, 300 ft. N, SE cor., Sec. 14-18-14 ..... Location.
South El Dorado Oil Co.'s No. 1 Traylor, 330 ft. N, 138 ft. W, SE cor. NW NE, Sec. 9-19-15 ..... W.O.S.R; 700 ft. fluid; T.D. 2,186 ft.

VAN BUREN COUNTY

Glenn Kohle et al, trustee's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32..... S.D; W.O. 602 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Trying to kill wtr. flow 2,150 ft; hard sand showing oil 1,637-40 ft.
Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32. U.R. 8-in. to T.D. 1,500 ft.
H. H. Taylor let al's No. 1 Runny, C NE SW, Sec. 1-13-19. Cmtd. 12½-in. 45 ft; S.D; W.O. 677 ft.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8 ..... Pulled 5 3/16-in.; S.D; W.O; T.D. 3,650 ft.

YELL COUNTY

Tegmeir & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.G. 4,160 ft; waiting for string 5 3/16-in.

EAST TEXAS

BOWIE COUNTY

Lee Timberlake's No. 1 Tidwell, 2,800 ft. N, 300 ft. W, SE cor., Jos. Eskell Sur. ..... Drlg. 2,223 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tract, in J. H. Murphy Sur. ..... Location.
Rogers et al's No. 1 Enfelt, R. M. Montgomery Sur. ..... T.A. 3,045 ft.

CASS COUNTY

Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor., J. A. Stephenson Sur. ..... Rig up.

MARION COUNTY

W. D. Chew's No. 1 Fee, 2,350 ft. W, 1,275 ft. N, SE cor., W. J. Hamilton Sur. ..... Drlg. hard shale 2,055 ft.
P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. ..... Drlg. 110 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur..... S.D. 2,865 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur..... Swedging 2 joints collapsed 8-in; arranging cmt. 6⅝-in. and packer 2,182 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas. Mason Sur. ..... Derrick.

SHELBY COUNTY

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 1 McCann, D. G. Green Sur. ..... Coring hard lime and sticky shale 5,204 ft.
Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur..... Coring hard lime 5,350 ft.

MISSISSIPPI

ADAMS COUNTY

A. C. Glassell et al's No. 1 Astonish, 75 ft. S, 75 ft. W, NE cor., Sec. 1-2n-5w ..... Began drlg. July 2; cmtd. 12½-in. 246 ft.

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e. Fishing 6-in. and tools 2,392 ft; T.D. 2,735 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ..... Fishing 8¼-in. csg. 1,414 ft.

HINDS COUNTY

Oscar Brown's No. 1 Riverside (formerly Hennessee et al's), SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,050 ft.
Cane River Oil Co.'s No. 1 Lufkin, Sec. 15-5-1e ..... Drlg. Wilcox 2,320 ft.
Capital O. & G. Co.'s No. 1 Brown, SW SE, Sec. 28-6-1e. Rig up.
Capital O. & G. Co.'s No. 1 Clark, Sec. 10-5-1e..... Rig up.
Dome Oil Co.'s No. 1 Elton, NE cor. SE SW, Sec. 5-4-1e. Drlg. 1,387 ft.
Interior Oil Co.'s No. 1 Belhaven Heights, 1,165 ft. W, 614 ft. S, NE cor., Sec. 2-5-1e ..... Derrick.
Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Section 3-5-1e..... Derrick.
Jackson O. & G. Co.'s No. 1 Capital Land & Inv. Co., Sec. 29-6-1e ..... Began drlg. July 1; cmtd. 10-in. 75 ft; S.D. in Cane River; T.D. 905 ft.
Jackson O. & G. Co.'s No. 1 Taylor, SE cor. SE, Sec. 35-6-1e ..... S.D. igneous rock 3,232 ft.
Love Bros.' (was Love O. & G. Co.'s) No. 1 Bridges-Hilzim, 870 ft. N, 920 ft. W, SE cor., Sec. 35-6-1e... S.D. 240 ft.
Love O. & G. Co.'s No. 1 Gordon, SW cor. SW NW, Sec. 8-5-1e ..... Drlg. iron pyrites 1,875 ft.
Love Pet. Co.'s (was Love O. & G. Co.'s) No. 2 Mendoza, NE cor., Lot 2, Sec. 12-5-1e ..... Derrick.
Marine O. & G. Co.'s No. 1 Country Club, NW cor., Sec. 31-6-1e ..... Began drlg. July 5; cmtd. 10-in. 66 ft.
Ohio Oil Co.'s No. 1 School, SE cor. N½ NE NE, Sec. 16-5-1e ..... Drlg. Wilcox 1,900 ft.
Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,905 ft.
Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ..... Derrick.
J. A. Weir et al's No. 1 Holliday & Ross, NW SE, Sec. 8-6-2e ..... Drlg. 280 ft.

HUMPHRIES COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Tested S.W. 3,252 ft; S.D. 3,420 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 ..... S.D; W.O; sandy shale 2,826 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14..... Derrick.

LAFAYETTE COUNTY

Banks-Goode et al's No. 1 May, 113½ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

Lincoln O. & G. Co.'s No. 1 Pat Case, NE cor. NE, Sec. 21-3-6 ..... S.D; W.O. 2,231 ft.

MADISON COUNTY

Barney Kennedy et al's No. 1 Raymond, 300 ft. E, 1,-300 ft. N, SW cor., Sec. 32-7-2e ..... Rig up; W.O.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D. 2,912 ft; bailer lost in hole.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Shot 2,402-18 ft; small S.O.; arranging to shoot 2,387-95 ft.
Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

RANKIN COUNTY

Gulf Ref. Co.'s No. 1 Rainey, NW NW, Sec. 13-5-1e..... Cmtd. back to 2,500 ft; drlg. plug; no gauge of volume; rock pressure 450 lbs; old T.D. 3,607 ft.
R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e. Drlg. 900 ft.
Interior Oil Co.'s No. 1 Moore, 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e ..... S.D. 900 ft.
Pearl River O. & G. Co.'s No. 1 Marter, 900 ft. N, 200 ft. W, SE cor. SW NW, Sec. 12-5-1e ..... Cmtd. 6⅝-in. on top chalk 2,-489 ft.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-15 ..... S.D. 2,475 ft; 2,350 ft. D.S. in hole; W.O.

WILKINSON COUNTY

A. C. Glassell et al's No. 1 Stowers, 31.4 chains W, 27.3 chains S, NE cor., Sec. 29-8-2w..... Cmtd. 12½-in. 465 ft.

YALOBUSHA COUNTY

Carter Oil Co. and J. W. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, Sec. 14-11-4 ..... Fishing slip; T.D. 2,215 ft.

YAZOO COUNTY

Amerada Pet. Corp.'s No. 1 Doherty, SW SW, Sec. 24-12-2 ..... Drlg. sandy lime 5,133 ft.

ALABAMA

LAMAR COUNTY

Griggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... T.A. 1,740 ft.

LAUDERDALE COUNTY

A. D. Morton et al's No. 10 O'Neal est., Sec. 8-3s-13w.... Cmtd. 12½-in. 125 ft; drlg. hard lime 905 ft.

MARION COUNTY

Hobson et al's No. 1 John Clark, SE, Sec. 29-11-14..... Derrick pattern.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; W.O; flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... Fishing bailer; T.D. 881 ft.
Oscar Brown's No. 2 Land & Cotton Co., Sec. 25-3-2w.... Drlg. 700 ft.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 46)

J. M. Russell's No. 1 F. L. Price, 1,590 ft. to N line, 660 ft. W line of tract in Angel Navarro Sur. .... T. D. 50 ft.; shut down.
J. M. Russell's No. 1 A. O. Miles, 1,600 ft. N line, 600 ft. W line 450-ac. tract, Angel Navarro Sur., 10 miles S from San Antonio ..... T. D. 700 ft.; shut down.
Swearingen Oil Co.'s No. 5 fee, 30 ft. S of No. 4, Sur. 52 ..... Location.
Swearingen Oil Co.'s No. 1 J. Halverdin, 1,997 ft. W line, 150 ft. SW line of 109-ac. tract in the J. Perege No. 52 Sur. ..... T. D. 699 ft.; drlg.
Henry Yelvington et al's No. 1 Beck, 355 ft. from W line, 310 ft. from S line 100-ac. tract, SW cor. of P. W. Hays Sur., 7 miles E from San Antonio ..... T. D. 1,470 ft.; shut down.
Louis Wentz' No. 1 J. Cassiano, 150 ft. N and E line of J. Cassiano 400 ac. in J. Monte Sur. ..... T. D. 2,343 ft.; abandoned dry.

CALDWELL COUNTY

J. T. Callahan's No. 1 W. H. Callahan, 630 ft. S line, 2,280 ft. W line 176-ac. tract in the J. R. Miller Sur. ..... Location.
W. E. Allaun's No. 1 Cosey, SW cor. of tract ..... Location.
W. E. Allaun's No. 2 McKean, 300 ft. W of No. 1 ..... Location.

COLORADO COUNTY

Penn Oil Co.'s No. 1 H. C. Wilson, 450 ft. from W line, 450 ft. from E line of 50-ac. tract in the John McCrosky Sur., 5 miles E from Columbus ..... T. D. 3,150 ft.; drlg. in sand and shale.

DEWITT COUNTY

H. T. Roe's No. 1 Leinhardt ..... T. D. 2,215 ft.; installing heavier rig.

DUVAL COUNTY

Vacuum Oil Co.'s No. 1 C. W. Hahl, Sur. 280 ..... Location.
Sal Oil & Gas Co.'s (Southern Oil Co.) No. 2 Welder-Wood, 1,980 ft. E line, 2,490 ft. N line Sur. 215 ..... T. D. 850 ft.; drlg.
T. W. Callahan and W. M. Howard's No. 1 J. M. Luby, 3,960 ft. N line, 3,960 ft. W line Sur. 24 ..... T. D. 3,570 ft.; drlg.
Putnam & Walsh's No. 1 Hagist, 570 ft. N line, 150 ft. E line, Blk. 5, Sur. 269 ..... T. D. 1,500 ft.; testing through tester.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 3,935 ft.; drlg.
James Daigish-Morrow's No. 1 Peterson, NW cor., Sec. 82, Blk. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. ..... T. D. 100 ft.; drlg.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Hulpzor ..... Rigging up; will spud in last of week.

GOLIAD COUNTY

Union Prod. Co.'s No. 12 George Ray, 2,350 ft. SW of NE line, 330 ft. NW of SE line George A. Ray 400 ac. in the Wm. Southerland Sur. ..... T. D. 2,050 ft.; drlg. in shale.
A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexter Sur. ..... T. D. 1,510 ft.; drlg. in shale.
Wm. F. Morgan's No. 1 Peirrie, 7,600 ft. SW of NE line, 2,550 ft. SW of NW line of Fannie Peirrie 2,350-ac. tract, SW part of county in the Vincente Ramon Sur. ..... T. D. 5,995 ft.; coring.

GONZALES COUNTY

Mardon Oil Co.'s No. 1 Borrer, 150 ft. N and W in the James Stewart Sur., 5 miles NW from Waelder ..... T. D. 1,850 ft.; shut down.
Linden Pet. Corp.'s No. 1 Hensley, 650 ft. N line, 1,110 ft. W line of J. W. Hensley 100 ac. in the James Smith ..... To spud in by end of week.
Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Sur. ..... T. D. 2,350 ft.; shut down.
A. J. Keiffer et al's No. 1 B. B. Dix, 550 ft. W of E line, 2,775 ft. N of S line (Guadalupe River) in the Ira Nash Sur., 4 miles SE from Darst Creek ..... T. D. 2,800 ft.; shut down.
Finnell & Elam's No. 1 J. F. Robinson, 2,000 ft. N line, 4,420 ft. E line, in the J. H. Livergood, 2½ miles NE from Waelder ..... T. D. 2,545 ft.; shut down.

GUADALUPE COUNTY

Adams & Lyles' No. 1 Denman, 838 ft. W line, 1,000 ft. N line of G. Denman 491-ac. tract in the William Havington Sur. ..... T. D. 2,811 ft.; abandoned.
Adams & Lyles' No. 1 Otto Nitche, 1,000 ft. S of N line of farm, 2,200 varas S of N line (Guadalupe River), 2,700 varas W of E line of Jesus Canter Sur., 5 miles SE from Seguin ..... Building derrick.
Cranfill & Reynolds' No. 1 McIntire, 150 ft. to E line, 150 ft. to S line of 100-ac. tract in the A. Gibson Sur., 6 miles SE from Seguin ..... Location.
Grayburg Oil Co.'s No. 2 Wells, 5,730 ft. E line, 2,490 ft. S line of NE cor. of Wells tract in the James D. Baume Sur., 6 miles SW from Darst Creek ..... Waiting on drilling rig.
Cranfill & Reynolds' No. 1 Wilson, 150 ft. S line, 1,200 ft. to W line 92-ac. tract in the Jesus Canter Sur., 8 miles SE from Seguin ..... Location corrected.
Brown Hinds et al's No. 1 George Altzger, 1,300 ft. from SE line, 1,100 ft. from SW line, of 120-ac. tract in A. Mansola Sur. ..... T. D. 1,975 ft.; shut down in Del Rio.
Louis Nels et al's No. 1 Voges, 517 ft. to S line, 150 ft. to E line of 150-ac. tract, 150 ft. E line and halfway to N and S line of Joseta Leal Sur. ..... T. D. 425 ft.; drlg. in chalk.
B. L. Raborn's No. 1 B. Blumberg, 1,120 ft. NW line, 3,000 ft. NE line of Moses Baker Sur. ..... T. D. 425 ft.; drlg. in shale.
Penn Oil Co.'s No. 1 State Land, 1,300 ft. W line J. C. Darst Sur., 1,300 ft. NE line R. Moss 50-ac., near SE cor. J. K. Davis Sur., 2½ miles SW from Darst Creek ..... T. D. 2,670 ft.; taking core.

JACKSON COUNTY

The Texas Company's No. 1 Mitchell, 1,750 ft. E, 880 ft. N of SW cor. Ewing Sur. ..... T. D. 3,440 ft.; drlg. in gumbo.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Subd. ..... T. D. 210 ft.; set 10-in. surface csg.; waiting on cement.

KARNES COUNTY

H. M. Lightfoot et al's No. 1 Barnett in the Alex Hunter Sur., 8 miles N of Karnes City ..... T. D. 2,916 ft.; Clayton & Pierce will deepen to 3,600 ft.

J. F. Morrissey et al's No. 1 Ragsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCoull Sur. ....T. D. 1,850 ft.; shut down.
Dr. Hewitt's No. 1 W. E. Porter, 650 ft. from N line, 700 ft. from W line of 416-ac. tract in the Victor Bianco Sur., 8 miles SE from Runge .....T. D. 2,700 ft.; drlg. in shale.
Moody-Seagraves' No. 1 W. W. Boyce, 2,110 ft. from E line, 487 ft. from S line in the W. W. Boyce Sur. ....T. D. 4,467 ft.; coring sand.
Mundine Investment Co.'s No. 1 A. D. Wilburn, C of 143-ac. in H. K. Hardy Sur., 3 miles SE from Runge .....T. D. 4,006 ft.; dry and abandoned.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. .....T. D. 940 ft.; shut down.
A. S. Mowinkle's No. 1 Kaston, 150 ft. from N line, 150 ft. from E line of tract, Sur. No. 724, 9 miles due W of Kendalia .....T. D. 900 ft.; drlg.
Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia .....T. D. 625 ft.; fishing.
Dickinson et al's No. 1 Edmondson, 150 ft. from S line, 350 ft. from W line of tract in the J. O. Blair No. 72 Sur., 1 mile NW from Kendalia .....T. D. 40 ft.; spudded in and shut down.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale .....T. D. 1,790 ft.; drlg.
P. B. Sterling's No. 1 McCracklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia .....T. D. 400 ft.; drlg. in shale.
R. M. Perkins' No. 1 J. Lawhon, Sec. 10, 2,475 ft. E line, 1,488 ft. S line .....T. D. 290 ft.; drlg.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. .....T. D. 520 ft.; drlg. lime rock.

KLEBERG COUNTY

Bowen & Sarles' No. 1 Robert, H. Simmons in the A. Houston Sur. No. 611, Sec. 7, King Subd., 150 ft. out of NW cor. of SW .....T. D. 1,580 ft.; shut down; W.O.C.

KINNEY COUNTY

Magnolia Petroleum Co.'s No. 1, SE cor. of Bladz Sur., near S.P.R.R., close to Blume test on Wardlow ranch, W part of county, 2½ miles from Blume ....T. D. 3,000 ft.; drlg.
A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur. in the Poindexter-Burns Sur. .....T. D. 275 ft.; shut down.

KIMBLE COUNTY

Lindley Bros.' No. 1 Anderson, Sec. 178, Mubenger Sur...T. D. 990 ft.; shut down.
Dixie Oil Co.'s No. 1 Bodel, 900 ft. W of N line of Sec. 440, in Sec. 80, in the J. S. Patterson Sur. .....Location.
C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. .....T. D. 685 ft.; shut down.

LIVE OAK COUNTY

O. Stalley et al's No. 1 Nichols, 2,000 ft. from W line, 600 ft. from S line in the Ayers Sur. .....Location.
Dougherty et al's No. 1 Jim Dougherty, 2,254 ft. SE of NW line, 750 ft. NE of SW line of M. Bowen Sur. .....T. D. 3,860 ft.; shut down.

LEE COUNTY

A. H. Wheeler and associates' No. 1, 14 miles NE from McDade .....Derrick up; to be an Edwards lime test.

McMULLEN COUNTY

E. H. Coquot's No. 1 Fahler, 2,300 ft. to N line, 300 ft. E line of 1,000-ac. tract in G. Pettus Sur. .....Spudded in and shut down.
Mazul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. .....Preparing to set surface csg.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 116, Blk. 7, I.&G.N. Sur. .....T. D. 2,800 ft.; shut down.
Rycade Oil Corp.'s No. 5 Chittim, 600 ft. W of No. 3 Chittim, 500 ft. E line, 225 ft. from S line of SE Sec. 115, Blk. 7, in the I.&G.N. Sur. .....T. D. 4,150 ft.; setting 5 3-16-in. csg.
Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. .....T. D. 6,535 ft.; drlg. in shale.

MEDINA COUNTY

Pat Armstrong's No. 1 C. W. Butts, in George C. Hanson Sur. .....T. D. 1,860 ft.; tested sulphur water; drlg. deeper.
Pearson Oil Co.'s No. 6 Medina Valley Inv. Co., 2,500 ft. S and E line of lease of Isom Palmer Sur. ....T. D. 720 ft.; drlg. in shale.
Pan American Pet. Co.'s No. 1 Antoine Hart, in Harrison Sur. No. 799, 15 miles S from Hondo .....T. D. 1,250 ft.; drlg. deeper after test; 2-bbl. well.
National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay .....T. D. 1,490 ft.; drlg.
Sun Oil Co.'s No. 1 Edgar, 450 ft. from E line, 150 ft. from S line of 320-ac. tract in the J. Buell No. 362, 3 miles N from Noonan .....T. D. 820 ft.; drlg. in Anacacho.
Donaldson Oil & Dev. Co.'s No. 2 Hillenmeyer, James Hillenmeyer No. 25 Sur., 500 ft. to E line of Sur., 150 ft. to S line of N half of Sur. .....T. D. 200 ft.; shut down.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of Sur., 478.6 miles W from Devine .....T. D. 400 ft.; shut down.

NUECES COUNTY

R. A. Thompson, trustee, et al's No. 1 Lawrence Harrell, 300 ft. N of S line and equal distance from E and W lines of Blk. 19, Sheppard farm lots subd., 4 miles W of Corpus Christi .....T. D. 1,735 ft.; blew out; hole lost.
R. A. Thompson et al's No. 2 Lawrence-Harrell, 300 ft. from N and E lines of Blk. 19 .....Rigging up.

SAN PATRICIO COUNTY

George B. Pickett's No. 1 Baldwin, 9,000 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Nell Sur., Abstract 211 .....T. D. 3,158 ft.; drlg. in sandy shale.
G. B. Peterman et al's No. 1 Crow, 150 ft. from S line, 170 ft. from W line of Sec. 24 of the Fulton-Coleman Pasture Lands, J. H. Paul Subd. .....Location (must be spudded in by August 1).
G. B. Peterman et al's No. 1 Foster, 150 ft. from E line, 1,420 ft. from N line of Blk. 5 of the Welder-Coleman-Fulton Subd., 3½ miles W from Sinton ....Location.
Cosden Oil Co.'s No. 1 Schmolsteig, C of SE Sec. 9, H. Powell Subd. in the B. Blanchard Sur. .....Set 400 ft. surface csg.; waiting on cement.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line .....T. D. 3,050 ft.; shut down in sandy shale.

STARR COUNTY

I. V. Maclean's No. 1, Tract No. 5, 1,063-ac., Porcion 81, Juan Jose de la Garza in the Falcon grant .....T. D. 150 ft.; drlg.
Kush Explin. Co.'s No. 1 .....T. D. 380 ft.; drlg.
J. L. Smith's No. 1 Welch, Perdernal Sur. .....T. D. 900 ft.; drlg.

UVALDE COUNTY

E. Anglin et al's No. 1 U.P.P., 1,500 ft. from NW line, 7,450 ft. to NE line of Manual Leal Sur., 10 miles SE from Uvalde .....Spudded in.
Waldrop & Welch's No. 1 H. S. Benson, 2 miles NW of Uvalde .....T. D. 1,616 ft.; drlg. in lime rock.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde .....T. D. 1,160 ft.; shut down.
Phantom Oil Co.'s No. 1 Claudt, Sec. 611 .....T. D. 2,250 ft.; reaming hole.

VICTORIA COUNTY

Attlee Drlg. Co.'s No. 1 M. West, 5,100 ft. to NE line, 1,050 ft. to NW line of 1,800-ac. tract in the P. DeWitt Sur. .....T. D. 1,623 ft.; drlg. in shale and gumbo.
Lion Oil Ref. Corp.'s No. 2 McFadden, 1,917 ft. W of NE cor., 512 ft. at right angles from N line of the C. O. Edwards Sur., 660 ft. E of No. 1 in the M. J. Travesia Sur. .....T. D. 1,080 ft.; set 1,080 ft. 10-in. csg.
The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. .....T. D. 1,000 ft.; set 10-in. csg.

WEBB COUNTY

J. L. Elliot's No. 1 Esperonza Land & Stock Co., 950 ft. from N line, 2,231 ft. E line Sur. 815 .....T. D. 900 ft.; standing.
O. W. Killam's No. 8 W. C. Billings, 100 ft. E line, 2,788 ft. S line Sur. 1 .....T. D. 2,607 ft.; plugged and abandoned.

WILLACY COUNTY

Weimer-Richardson's No. 1 Elmore .....T. D. 1,360 ft.; shut down in gumbo.

WILSON COUNTY

Transcontinental Oil Co.'s No. 1 J. H. Bain, 150 ft. out of E cor. of tract, 1,850 varas from SW line and 75 varas from SE line of Noel F. Roberts Sur. .....T. D. 4,300 ft.; drlg.

WILLIAMSON COUNTY

Harlem et al's No. 1 H. H. Stiles, in the J. Bevil Sur., 220 ft. N and 330 ft. E of Sur. .....Rigging up.
Fred Beatty's No. 1 H. Bland, 450 ft. from N line, 1,000 ft. from E line of tract, in the P. Coursey Sur., 1 mile E from Taylor .....T. D. 1,176 ft.; shut down.
Fred Beatty's No. 1 J. B. Pumphrey, 1,328 ft. from S and E lines of Mrs. J. B. Pumphrey 158-ac. tract in the W. Cartwright Sur. .....Rigging up.
M. Bartlett et al's No. 1 R. E. Thomas, 450 ft. from N line, 170 ft. from E line of S 50 of 100-ac. of farm in the H. Owen Sur. .....Spudded in.
E. L. Chapman's No. 2 J. H. McConnell, 1,070 ft. from W line, 150 ft. from N line of tract in the S. Miller Sur. .....Rigging up.
Elliot et al's No. 1 S. W. Jones, 600 ft. from W line, 400 ft. from S line of Alvert Nantz Sur. .....Spudded in.
E. L. Chapman's No. 2 Fuchs, 150 ft. SW line, 750 ft. NW line of 93-ac. tract in the S. Miller Sur. .....T. D. 1,000 ft.; drlg.
G. B. Peterman's No. 2 J. C. Abbott, 450 ft. from S and W line of Abbott 100-ac. tract, in the Simon Miller Sur., SE from Thrall .....Rigging up.
Bridwell et al's No. 1 H. L. Martin, 1,150 ft. from N line, 150 ft. from W line of Simon Miller Sur. .....Rigging up.
McNeil et al's No. 1 R. L. Abbott, 300 ft. NW line, 150 ft. NE line of Abbott 15-ac. tract, in the S. Miller Sur. .....Spudded in.
Powell & Kykendall's No. 1 Christian Mager, in the W. Byerly Sur., 150 ft. N and 450 ft. E of farms of 150 acres .....Old well deepening.
E. L. Chapman's No. 1 Barney Lawrence, 330 ft. from SE and SW lines of farm, in the Simon Miller Sur...Rigging up.
E. L. Chapman's No. 1 J. F. McConnell, 150 ft. from S and W of 100-ac. farm in the Simon Miller Sur...T. D. 1,922 ft.; Serpentine; show of oil 1,900 ft.
E. R. Ertell's No. 1 J. F. McConnell, 295 ft. from N line, 130 ft. from W of S 50-ac. of 100-ac. farm, in the Simon Miller Sur. .....T. D. 2,136 ft.; small oil show 1,100 ft.
Keeshan et al's No. 1 R. L. Abbott, 170 ft. from N line, 772 ft. from W line of farm, in the Simon Miller Sur. .....Derrick up.
E. W. Marts et al's No. 1 R. L. Abbott .....Spudded in.
Taylor Temple Oil Co.'s No. 1 F. M. Cain, 876 ft. from E line, 150 ft. from N line of C. D. Johnson 109-ac. tract in the S. Miller Sur. .....Rigging up rotary.
J. A. Thompson's No. 1 T. H. Martin, 150 ft. N and E lines of 20-ac. tract in the S. Miller Sur. .....Location.
Westheimer & Daube's No. 1 R. L. Abbott, 150 ft. from N and W lines of 57-ac. tract in the S. Miller Sur. ..Location.
R. R. Wilder's No. 1 H. T. Martin, 158 ft. from N and E lines of H. T. Martin 76.25-ac. tract in the S. Miller Sur. .....Rigging up rotary.
L. W. Wilson et al's No. 1 W. L. Lawrence, 150 ft. from W line and C N and S of 35-ac. tract or 1,400 ft. from SW line, 1,450 ft. SW line of H. Owens Sur. ....Spudded in.

ZAPATA COUNTY

B. F. Nixon's No. 1 A. Gutierrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant ...T. D. 50 ft.; standing.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 .....T. D. 250 ft.; drlg.
Penny Prod. Co.'s No. 1 Trevino, 300 ft. SE line, 200 ft. NE line Marts & Beavers Subd. of Porcion 2 and 3, Blk. 6, Sur. 4 .....T. D. 680 ft.; drlg.
National Oil Co.'s No. 1 D. B. Adams .....T. D. 1,200 ft.; standing.

ZAVALA COUNTY

Krebs & Davis' No. 1 Weathersby, E center of NW of Sec. 44, Blk. A, Adams, Beaty & Mouton Sur., 4 mi. E from Loma Vista .....T. D. 1,550 ft.; shut down in shale.
Texas Gas Utilities Co.'s No. 6 A. M. West, C of Sur. in the M. Suniga Sur. No. 44 .....Location.
Weigand Bros.' No. 1 W. L. Gates, Hooper & Ware Sur. No. 13, 1,320 ft. S of N line, 1,320 ft. W of NE cor. Sur., about 16 miles S of Batesville .....T. D. 2,300 ft. (corrected depth) shut down.
Jack Baldwin's No. 1 J. R. Price, in the W. E. Erskin Sur. No. 34 .....T. D. 3,008 ft.; dry and abandoned.
Texas Fuel & Gas Co.'s No. 5 West, 150 ft. from SE line, 4,700 ft. from SW of Marguett Singer Sur., 20 miles SW from Batesville .....T. D. 1,500 ft.; shut down.
F. Baldwin's No. 1 Washer, 300 ft. S and E of Sec. 34, in the W. E. Erskin Sur. .....Dropped from reports; is duplication of test previously reported.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 48)

RACCOON BEND—AUSTIN COUNTY

Humble Oil & Ref. Co.'s No. 9 Thompson .....Derrick.
Humble Oil & Ref. Co.'s No. 10 Thompson .....Location.
Humble & Valley's No. 5 Bellville .....Drlg. sand 3,372 ft.
Humble & Valley's No. 3 Buchanan .....Derrick.
Humble & Valley's No. 2-B Hardy .....Drlg. sand 315 ft.
Humble & Valley's No. 7 Payne .....Derrick.
Humble & Valley's No. 8 Payne .....Derrick.
Humble & Valley's No. 2 Sherrod .....Drlg. shale 2,190 ft.
Humble & Valley's No. 6 Woodley .....Derrick.
Humble & Valley's No. 7 Woodley .....Derrick.
Humble & Valley's No. 8 Woodley .....Derrick.
Humble & Valley's No. 9 Woodley .....Derrick.

DEWALT—FORT BEND COUNTY

Humble Oil & Ref. Co.'s No. 15 Brazos .....Drlg. sandy shale 3,697 ft.
Humble Oil & Ref. Co.'s No. 6 Camp .....Derrick.

HUMBLE—HARRIS COUNTY

Houtex Oil Co.'s No. 1 Hirsch, northwest ..... Abandoned 5,260 ft.
LaRue, trustee's No. 1 Crane, northwest ..... No report.
Rio Bravo Oil Co.'s No. 3 Fee, west ..... Drlg. sand and boulders 2,015 ft.
Rio Bravo Oil Co.'s No. 4 fee, southwest ..... Derrick.
Rio Bravo Oil Co.'s No. 1 K&W.T., west ..... Drlg. gumbo 1,307 ft.
South Drlg. & Prod. Co.'s No. 1 Lipper, northwest ..... No report.
South Texas Pet. Co.'s No. 15 Morris, south ..... Drlg. shale 4,311 ft.
Sun Oil Co.'s No. 9 Bender, west ..... Drlg. 2,760 ft.
Sun Oil Co.'s No. 8 Bender, west ..... Comp. flowing 1,850 bbls. pipe line oil 4,223 ft.
Sun Oil Co.'s No. 10 Bender, west ..... No report.
Sun Oil Co.'s No. 11 Bender, west ..... Location.
Sun Oil Co.'s No. 48 River, north ..... Drlg. hard sand showing oil 4,680 ft.
Sun Oil Co.'s No. 49 River, north ..... Location.
Trap Shooter Riley's No. 1 Long John Jones ..... No report.
The Texas Company's No. 1 Fee ..... Derrick.
The Texas Company's No. 23 Wheeler and Pickens, northeast ..... Drlg. shale, lime and boulders 3,582 ft.
West Prod. Co.'s No. 3 Foster, north ..... Drilling.

BLUE RIDGE—FORT BEND COUNTY

Joe Collins' No. 1 R. C. Duff ..... Abandoned in heaving shale 4,690 ft.
Gulf Production Co.'s No. 18 Luscher, south ..... Drlg. sand and boulders 1,196 ft.
Navarro Oil Co.'s No. 9-A Robinson, west ..... Abandoned in salt 5,219 ft.

PIERCE JUNCTION—HARRIS COUNTY

Navarro Oil Co. and Texas Exploration Co.'s No. 19 Dooley, east ..... Drlg. sticky shale 4,361 ft.
Rio Bravo Oil Co.'s No. 12-A Settegast (workover) ..... Sand 5,404 ft.; trying to set casing.
Rio Bravo Oil Co.'s No. 19-A Settegast ..... Drlg. gumbo 3,000 ft.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 13 O'Brien ..... Rig.
The Texas Company's No. 7 Green, northwest ..... Drlg. hard sand 3,868 ft.

HULL—LIBERTY COUNTY

Republic Prod. Co.'s No. 44 Dolbear (workover) ..... Comp. flowing 2,000 bbls. pipe line oil, 24 gravity, 2,715 ft.
Empire Gas & Fuel Co.'s No. 32 Barngrover (workover).. Comp. flowing 400 bbls. pipe line oil 3,976 ft.
The Texas Company's No. 2 Barrow ..... Swabbing oil and salt water 3,993 ft. showing gas.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 59 Davis ..... Drlg. gumbo 1,502 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 11 Mayes ..... Coring sandy shale 2,717 ft.
Pure Oil Co.'s No. 11-A Mayes ..... Location.
Pure Oil Co.'s No. 5 Lost Lake ..... Drlg. gumbo 1,178 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Drlg. sand and boulders 1,826 ft.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 306 Texas Co. fee ..... Drlg. gumbo and boulders 1,920 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 87-A Cotton ..... Drlg. shale and pyrites 559 ft.

GOOSE CREEK—HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Drlg. hard sandy shale and lime 2,717 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 5 Fee (workover) ..... Drlg. sand 3,672 ft.
Yount Lee Oil Co.'s No. 35 McFaddin (workover) ..... Set screen 2,459 fft.
Yount Lee Oil Co.'s No. 132 McFaddin ..... Total depth 5,794 ft.; tested salt water 2,807 ft.; abandoned.
Yount Lee Oil Co.'s No. 137 McFaddin ..... Drlg. shale 5,100 ft.
Yount Lee Oil Co.'s No. 138 McFaddin ..... Drlg. shale and lime 4,800 ft.
Yount Lee Oil Co.'s No. 139 McFaddin ..... Drlg. shale and lime 3,834 ft.
Yount Lee Oil Co.'s No. 140 McFaddin ..... Drlg. sand and lime 2,646 ft.
Yount Lee Oil Co.'s No. 1 Greer-Hall (workover) ..... Drlg. sand, lime and shale 4,391 ft.

NORTH DAYTON—LIBERTY COUNTY

Victor Oil Co.'s (V. H. Borsodi) No. 2 Gulf ..... Total depth 4,768 ft.; sidetracking 3,533 ft.
Houston Oil Co.'s No. 1 Davis, north ..... Derrick.
Houtex Oil Co.'s No. 2 Wilhite ..... Drlg. sand and shale 5,131 ft.
Harrison Oil Co.'s No. 5 Quintette ..... Location.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 10 Smith ..... Drlg. sand 3,959 ft.
Marrs McLean's No. 18 Cade ..... Drlg. hard sand and lime 4,085 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 23 Moore ..... Drlg. shale and lime 3,310 ft.
Gulf Production Co.'s No. 24 Moore ..... Drlg. sand rock 3,322 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.'s No. 14 Esperson ..... Drlg. gumbo 956 ft.
Cranfill-Reynolds Oil Co.'s No. 4 Davis ..... To pump 2,347 ft.
Cranfill-Reynolds Oil Co.'s No. 1 Vajdak (workover) ... Set 410 ft. screen 7,386 ft.; swabbing estimated 100 bbls. daily.
Cranfill-Reynolds Oil Co.'s No. 3 Moores Bluff ..... Drlg. gumbo 2,256 ft.
Cranfill-Reynolds Oil Co.'s No. 1-B Moores Bluff ..... Water sand 3,075 ft.
Republic Production Co.'s No. 1 Moores Bluff ..... Abandoned in shale 5,183 ft.
Yount Lee Oil Co.'s No. 3 Moores Bluff ..... Drlg. shale 7,140 ft.

HANKAMER—LIBERTY COUNTY

Gulf Production Co.'s No. 7 Boyt ..... Drlg. shale 4,070 ft.
Gulf Production Co.'s No. 8 Boyt ..... Drlg. shale 3,612 ft.
Gulf Production Co.'s No. 1 Ezzell ..... Drlg. sand 2,660 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Anderson et al's No. 1 Smith & Brooks ..... Drlg. gumbo 2,340 ft.

ORANGE—ORANGE COUNTY

Sun Oil Co.'s No. 7 Gunstream ..... Started drilling.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Volney ..... Shut down 235 ft.
C. S. Thomas' No. 1 Taylor ..... Drlg. sandy lime 988 ft.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 3 Ryals ..... Cored sandy shale 3,563-69 ft.
Houston Oil Co.'s No. 1 Rooke ..... Rig.
Houston Oil Co.'s No. 1 Strauch, Block 20 ..... Blowing wild; sand 5,468 ft.
Houston Oil Co.'s No. 1 City, Block 59 ..... Drlg. gumbo 2,516 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Waiting water 512 ft.
Houston Oil Co.'s No. 1 West ..... Oil sand 5,427-31 ft.; cem. casing.
Houston Oil Co.'s No. 1 Rose Lambert ..... Set 21 ft. screen 5,905 ft.; swabbed salt water; to plug back.
Houston Oil Co.'s No. 2 Rose Lambert ..... Cem. casing 4,561 ft.
Houston Oil Co.'s No. 1-A Fannie Heard ..... Comp. flowing 250 bbls. 5,378 ft.
Houston Oil Co.'s No. 7 Fannie Heard (workover) ..... Drill stem test showed salt water 3,680-85 ft.; to plug back.
Houston Oil Co.'s No. 1 Johnson, Block 63 ..... Drlg. gumbo and shale 1,956 ft.
Independent Oil Co.'s No. 1-B J. F. B. Heard (workover).. Set 7-ft. screen 3,656 ft.; comp. flowing by gas lift 200 bbls. daily.
Independent Oil & Gas Co.'s No. 1 Mitchell ..... Derrick.
Independent Oil & Gas Co.'s No. 1 Shelly (workover) ... Oil sand 6,335-6,446 ft.; set 5 3/16-in. casing 6,436 ft.
Independent Oil & Gas Co.'s No. 6 Jerry Reilly (workover) ..... Drlg. shale 5,750 ft.
Edwin M. Jones' No. 3-A J. F. B. Heard ..... Tested salt water 3,676 ft.; plugged bottom of hole.
Edwin M. Jones' No. 4-A J. F. B. Heard ..... Sand 3,636-45 ft.; cem. casing.
Larco Co.'s No. 5 Strauch ..... Set 10-ft. screen and tubing on seal; comp. flowing 50 bbls. 3,658 ft.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Rebuilding derrick 3,758 ft.
Luling Oil & Gas Co.'s No. 1 West ..... Rig up to deepen.
Mission Drilling Co.'s No. 1 Moss-Heard, Blk. 111 ..... Location.
Mission Drilling Co.'s No. 1 Holmes Heard ..... Set tubing on seal 3,700 ft.; comp flowing 450 bbls.
Mission Drilling Co.'s No. 1 O'Brien (workover) ..... Preparing to deepen.
Mission Drilling Co.'s No. 1 Joe Shay, Block 6 ..... Coring shale 5,453 ft.
Moody-Seagraves Prod. Co.'s No. 2 O'Brien ..... Killing well 5,691-99 ft.
Moody-Seagraves Prod. Co.'s No. 1-A O'Brien ..... Derrick.
Moody-Seagraves Prod. Co.'s No. 8 O'Brien ..... Derrick.
Moody-Seagraves Prod. Co.'s No. 9 O'Brien ..... Drlg. sticky shale 5,492 ft.
Moody-Seagraves Prod. Co.'s No. 1 Strauch, Block 64 .... Drlg. sticky shale 5,304 ft.
Moody-Seagraves Prod. Co.'s No. 1-A St. John ..... Rig.
Morgan Oil Corp.'s No. 2 O'Connor ..... Cored water sand 5,458 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Rig.
Pearson Properties, Inc.'s No. 3 Ryals ..... Derrick.
Pearson Properties, Inc.'s No. 1 Tobe Wood ..... Fishing 4,760 ft.
Ed Price's No. 1 Mission River ..... Tested salt water 3,663 ft.; plugging back.
Saxet Oil Co.'s No. 12 Clint Heard ..... Drlg. hard lime 4,342 ft.
Saxet Oil Co.'s No. 1 Kay ..... Drlg. sticky shale 2,340 ft.
Saxet Oil Co.'s No. 3 Ryals ..... Derrick.
L. L. Smith's No. 1 Sumner ..... Drlg. hard sand and lime 3,700 ft.
Sun Oil Co.'s No. 5 Buckley ..... Comp. flowing 50 bbls. 3,699-3,704 ft.
The Texas Company's No. 2 Ben Shelton ..... Drlg. lime 3,606 ft.
Union Producing Co.'s No. 5 O'Brien ..... Cored shale and hard lime 5,407-5,414 ft.
Union Producing Co.'s No. 6 O'Brien ..... Derrick.
Union Producing Co.'s No. 4 Powers ..... Killing well 5,710 ft.
Union Producing Co.'s No. 5 Powers ..... Location.
Union Producing Co.'s No. 5 Mitchell ..... Rig.
Union Producing Co.'s No. 2 Eskridge-Heard ..... Drlg. 500 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Moss ..... Drlg. sticky shale 4,541 ft.
Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. sandy shale 2,640 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Drlg. hard sand 2,287 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 29 Miller ..... Building derrick.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 5 Freiberg & Wolf ..... Drlg. water sand 5,032 ft.
Vacuum Oil Co. and Gulf Prod. Co.'s No. 7 Farquahar .. Oil sand 4,815 ft.; cem. casing.
Vacuum Oil Co.'s No. 6 Bayou State ..... Derrick.
Yount-Lee Oil Co.'s No. 1 Miller ..... Drlg. gumbo 3,764 ft.

HACKBERRY—CAMERON PARISH

F. A. Book's No. 1 Hanzen ..... Drlg. shale 3,212 ft.
Calcasieu Oil Co.'s No. 19 Watkins ..... Spudded.
Calcasieu Oil Co.'s No. 3 Isaac Dorisu ..... Drlg. gumbo 1,826 ft.
Duhon Oil & Mineral Co.'s N. 1 Koonce ..... No report.
Federal Petroleum Co.'s No. 1 Hebert ..... Drlg. shale 4,460 ft.
Gulf Refining Co.'s No. 1 Erwin ..... Abandoned in salt 3,575 ft.
Moon Oil Co.'s No. 5 Sonner ..... Cem. casing to test oil sand.
The Texas Company's No. 7 State ..... Cem. 20-in. surface casing.
Yount Lee Oil Co.'s No. 1 Portia ..... Tested salt water 3,670 ft., trying to sidetrack 3,600 ft.
Yount Lee Oil Co.'s No. 3 R. Vincent ..... Rigging up to pump 3,716 ft.

JENNINGS—ACADIA PARISH

Abshire-Bolyard's No. 6 Jennings ..... Comp. pumping 300 bbls. fluid 13 per cent oil, 1,649 ft.
The Texas Company's No. 5 Rayne heirs, King tract ... Drlg. rock 8,512 ft.
Yount Lee Oil Co.'s No. 9 Houslene Latville ..... Drlg. 4,126 ft.
Yount Lee Oil Co.'s No. 7 Crowley ..... No report.

VINTON—CALCASIEU PARISH

Emerson-Moore's No. 1 Gray estate ..... Location.
Gulf Refining Co.'s No. 2 Gardner ..... Total depth 3,780 ft.; sidetracking 3,386 ft.
Gulf Refining Co.'s No. 3 Gardner ..... Drlg. 3,412 ft.
Vinton Petroleum Co.'s No. 8 Gray ..... Drlg. 800 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Drlg. hard sand 4,583 ft.
Rycade Oil Corp.'s No. 10 Bouillon fee ..... Oil sand 4,284-99 ft.; cem. 9⅝-in. casing 4,260 ft.

STARKS—CALCASIEU PARISH

Adams Oil Co.'s No. 1 Roderick ..... No report.
J. O. Davis' No. 1 Industrial ..... Standing 3,775 ft.
Gulf Refining Co.'s No. 24 Starks ..... Derrick.

SWEET LAKE—CAMERON PARISH

Magnolia Petroleum Co.'s No. 1 Sweet Lake ..... Drlg. 3,416 ft.
Pure Oil Co.'s No. 9 Yount Lee ..... Oil sand 6,803-13 ft.; to set casing.

ANSA LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 2 Herbert ..... No report.

PORT BARRE—ST. LANDRY PARISH

Gulf Refining Co.'s No. 3 Hoskins ..... Comp. flowing 365 bbls. oil 3,342 ft.
Alex Rice, trustee's No. 1 Futral ..... Drlg. rock 4,590 ft.
Pure Oil Co.'s No. 1 Perkins ..... Coring sandy shale 2,904 ft.
The Texas Company's No. 8 Botany Bay ..... Set screen 3,339 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Black Oil Co.'s No. 1 Lancashire, near Sealey ..... Abandoned 4,247 ft.
O'Hara et al's No. 1 Batla, near Raccoon City ..... Shut down 4,000 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. .... Drlg. shale 5,841 ft.
Mills Bennett Production Co.'s No. 1 Random, Allen .... Shale 5,363 ft.; fishing whipstock 4,914 ft.
Mills Bennett Production Co.'s No. 1 Reese, Allen ..... Drlg. sandy shale 2,040 ft.
Mills Bennett Prod. Co.'s No. 1 Poole, Allen ..... Derrick.
Cullen & West's No. 1 Ward, Damon Mound ..... Drlg. shale 4,128 ft.
Faust et al's No. 5 Faust ..... Drlg. shale and lime showing gas 4,376 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights .... Drlg. gumbo 1,798 ft.
Layne et al's No. 6 Wisdom, Damon Mound ..... Swabbed dry 2,804 ft.; drlg. deeper.
Rucks & Patterson's No. 1 Hunter, southwest of Hoskins.. Total depth 1,180 ft.; sidetracked to rock 968 ft.; shut down.
Rycade Oil Corp.'s No. 1 Rapid City, Henry Austin Sur... Total depth 5,721 ft.; trying to set packer.
Rycade Oil Corp.'s No. 1 Seaburn, Stratton Ridge ..... Clearing location.
Rycade Oil Corp. and Vacuum Oil Co.'s No. 1 Wisdom, Lake Jackson ..... Location.
Shell Petroleum Corp.'s No. 8 Blakely-Weston, Danbury.. Abandoned 1,745 ft.
Steel & Strickland's No. 1 Lockridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Moores, Francis Moore Sur. ..... Drlg. shale 1,446 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas, J. P. Tilley Sur..... Drlg. gumbo and sand 2,011 ft.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Shut down 3,310 ft.
Shell Petroleum Corp.'s No. 1 Herff, Moss Bluff ..... Total depth 5,630 ft.; sidetracking 5,470 ft.; brittle shale and streaks of sand.
Pure Oil Co.'s No. 1 Kirby, Charles Tilton Survey ..... Coring shale 6,657 ft.
Pure Oil Co.'s No. 1 J.H.K. Ranch, Oyster Bayou ..... Total depth 3,977 ft.; completed fishing job; to resume drilling.
Superior Oil Corp.'s No. 1 Jackson ..... Washing to bottom 3,865 ft.
The Texas Company's No. 1 Jackson, T.&N.O. Sur., Sec. 17 ..... Drlg. sand and boulders 2,649 ft.

COLORADO COUNTY

Gulf, Humble and Penn's No. 1 Wilson, John McCroskey Sur. ..... Drlg. shale 4,236 ft.

GRIMES COUNTY

Cranfill-Reynolds Oil Co.'s No. 1 Stoneham, Navasota ... Drlg. shale 2,846 ft.
Deering & Noble's No. 1 Templeman, 6 miles south Navasota ..... Drlg. shale 1,857 ft.

HARDIN COUNTY

D. O. Speights' No. 1 fee, near Batson ..... Drlg. gumbo 2,481 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Shut down 4,247 ft.
Humble Oil & Ref. Co.'s No. 7 Warren, Hockley ..... Total depth 7,067 ft.; derrick pulled in.
Humble Oil & Ref. Co.'s No. 3 Minnetex, Mykawa ..... Drlg. gumbo 1,346 ft.
Strang Oil Co.'s No. 1 Good, Deer Park ..... Abandoned 6,012 ft.

JASPER COUNTY

Helmerich & Payne, Inc.'s No. 1 C. L. Flourney ..... Location.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna ... Drlg. shale 3,317 ft.
The Texas Company's No. 1 C. A. Mitchell, G. Ewing Sur. ..... Drlg. sand and shale 5,517 ft.

JEFFERSON COUNTY

Deep Test Oil Co.'s No. 1 McFaddin, Chaisson Sur. ..... No report.
Gulf Production Co.'s No. 2-A Junker, Fannett ..... Tested salt water 4,190 ft.
The Texas Company's No. 3 Pipkin, Big Hill ..... Losing returns 1,577 ft.
Westbury Oil Co.'s No. 1 West, Choate Sur. ..... Drlg. gumbo 3,500 ft.

LIBERTY COUNTY

Gulf Production Co.'s No. 2 McFaddin, Moss Bluff ..... Location.
Humble Oil & Ref. Co.'s No. 1 Sabine Tram, Devers .... Drlg. sand 5,722 ft.
Rycade Oil Corp.'s No. 1 Schettman, John Dugat Sur. ... Moving in material.
Tucker et al's No. 1 Bell, Devers ..... Derrick.

MATAGORDA COUNTY

Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove ..... Location.
Watts Oil Co.'s No. 1 Titus, Wheelright Sur. ..... Abandoned 3,509 ft.

MONTGOMERY COUNTY

Kelley-Kaker's No. 2 Guerges ..... Shut down 1,915 ft.

ORANGE COUNTY

Gulf Production Co.'s No. 1 W. E. Starks, Port Neches... Drlg. sand 4,716 ft.
The Texas Company's No. 2 Kuhn, Port Neches ..... Cored sand showing oil 4,406-10 ft.
The Texas Company's No. 2 Stark, Port Neches ..... Drlg. sand, shale and lime 4,588 ft.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman ..... Drlg. sandy shale 2,770 ft.
Dixon et al's No. 1 Jurica ..... Abandoned in sandy shale 3,951 ft.

VICTORIA COUNTY

The Texas Company's No. 1 McFaddin, H. Bonny Sur.... Cem. casing 1,087 ft.
Lion Oil & Ref. Co.'s No. 2 McFaddin, M. Travlers Sur... Rig.
Newton et al's No. 1 West ..... Shut down 1,550 ft.

WALKER COUNTY

Texas State Oil Co.'s No. 2 Foils, H.&T.C. Sur., Abstract 287 ..... Shut down 1,802 ft.

WALLER COUNTY

Kirby Pet. Co.'s No. 2 Rogers, San Felipe ..... Drlg. sand and boulders 1,048 ft.
W. P. Morris' No. 1 Chapman, Donoho Sur. ..... Drlg. shale and lime 2,600 ft.

WASHINGTON COUNTY

W. Birdwell's No. 1 Schram, James Walker Sur. ..... Shut down 2,110 ft.
Clifton et al's No. 1 Pruiss, E. Alcorn Sur. ..... Drlg. shale 1,610 ft.
Sun Oil Co.'s No. 9 Grote, Clay Creek ..... Total depth 3,198 ft.; plugged back to 1,298 ft. to test.
Sun Oil Co.'s No. 4 Clay, Clay Creek ..... Drlg. anhydrite 3,202 ft.
Sun Oil Co.'s No. 5 Hunt, Clay Creek ..... Rig.
Sun Oil Co.'s No. 4 Janner, Clay Creek ..... Drlg. gumbo 1,330 ft.
Sun Oil Co.'s No. 5 Janner, Clay Creek ..... Total depth 1,426 ft.; plugged to 1,421 ft.; comp. pumping 10 bbls.

SOUTH LOUISIANA
ACADIA PARISH

Charles P. Siess' No. 1 Roller, Sec. 8-9s-1e ..... No report.

CALCASIEU PARISH

Wilfred Lahay's No. 2 James ..... Standing 3,970 ft.

CAMERON PARISH

Shell Petroleum Corp.'s No. 15 Watkins, Black Bayou ... Building derrick.
Shell Petroleum Corp.'s No. 1 State, Black Bayou ..... Drlg. blue shale 114 ft.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Total depth 3,953 ft.; fishing drill stem.
The Texas Company's No. 6 State, Calcasieu Lake ..... Rigging up.

IBERIA PARISH

Lake Oil Co.'s No. 1 Ben White, Sec. 54-12s-7e ..... Drlg. 2,000 ft.
Jefferson Lake Oil Co.'s No. 7 Lake Peigneur, Jefferson Lake ..... Location.
Jefferson Lake Oil Co.'s No. 8 Lake Peigneur, Jefferson Lake ..... Location.
The Texas Company's No. 5 Vermillion Bay ..... Drlg. hard sand 3,988 ft.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 5 Wilbert, White Castle .... Drlg. water sand 938 f.t
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Drlg. 2,202 ft.
Standard Oil Co.'s No. 5 Wilbert, Bayou Blue ..... Drlg. 2,850 ft.
Standard Oil Co.'s No. 7 Wilbert ..... Derrick.
Standard Oil Co.'s No. 8 Wilbert ..... Drlg. 902 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Driving piling.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue... Building derrick.
Standard Oil Co.'s No. 2 Case, Bayou Des Glaise ..... Location.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 2-16s-23e.. Total depth 1,900 ft. sand; reaming 1,650 ft.

JEFFERSON DAVIS PARISH

Shell Petroleum Corp.'s No. 1 Heyd, Iowa ..... Location.

LAFAYETTE PARISH

Pure Oil Co.'s No. 1 Marmetin, Carenero ..... Total depth 4,176 ft.; gumbo; reaming.

LA FOURCHE PARISH

The Texas Company's No. 1 Leesville ..... Drlg. sandy shale 5,601 ft.; slight show.

PLAQUEMINE PARISH

Humble Oil & Ref. Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... Coring 5,214 ft.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille ..... Dredging canal to location.
Humble Oil & Ref. Co.'s No. 3 Cockrell, Lake Grand Ecaille ..... Cap rock 1,525-44 ft.
The Texas Company's No. 4 State, Garden Island ..... Set casing 700 ft.

ST. LANDRY PARISH

Herbert-Baker Oil Co.'s No. 1 Fisher, Sec. 10-3S-4e ..... Fishing 4,378 ft.

ST. MARTIN PARISH

The Texas Company's No. 3 St. Martin, Hager ..... Total depth 2,243 ft. in salt; to test 2,621 ft.

ST. MARY PARISH

Louisiana Land & Exploration Co.'s No. 1 Fox, Berwick.. Rigging.
The Texas Company's No. 1 South Coast, Sec. 41-14s-16e No report.

TERREBONNE PARISH

Freeport Sulphur Co.'s No. 1 Nelson, Sec. 12-21s-11e .... Drill stem stuck 6,025 ft.
Charles Paggi's No. 2 Evergreen, Sec. 145-15s-16e ..... Standing 1,818 ft.
The Texas Company's No. 4 State-Bay St. Elaine ..... Total depth 5,455 ft.; showing oil.
The Texas Company's No. 5 State, Bay St. Elaine ..... Location.
The Texas Company's No. 3 State, Caillou Island ..... Drlg. 150 ft.
The Texas Company's No. 5 State, Caillou Island ..... Location.
The Texas Company's No. 4 State, Lake Barre ..... Comp. flowing 1,240 bbls. on ¾-in. choke 3,660 ft.
The Texas Company's No. 3 State, Dog Lake ..... Location.
The Texas Company's No. 4 La. L & E. Four Isle ..... Rig.
The Texas Company's No. 2 State, Lake Pelto ..... Rig up to work over.
The Texas Company's No. 2 La. L. & E., Bay Junop .... Location.
The Texas Company's No. 2 State, Bay Junop ..... Derrick.

SOUTHWEST TEXAS

(Continued from Page 47)

150 feet from south and west lines of tract in the J. R. Robinson Survey, location. Magnolia Petroleum Co.'s No. 3 L. V. Echols, 2,400 feet to southwest line, 1,100 feet to southeast line of farm in the James Hodges Survey, total depth 2,565 feet, drilling. The Texas Company's No. 8-B C. Knoblock, 1,080 feet from northeast line, 150 feet from southeast line of 75-acre tract in the J. B. Robinson Survey, location.

Pettus Field—Bee County

Batex Petroleum Co.'s No. 1 Mrs. H. J. Burnett, 360 feet north line, 300 feet east line of north 100 acres of 300-acre farm in the John Pace Survey, total depth 3,635 feet, preparing to swab. Buchanan Ogden's (H. H. Weinert) No. 1 Townsite, center of Block 38, Pettus Townsite, total depth, 2,980 feet, drilling. Cosden Oil Co.'s No. 2 McKinney, 860 feet south line, 300 feet east line of tract in the S. John Pace Survey, total depth 3,628 feet. Same company's No. 3 McKinney, 360 feet south line, 800 feet east line of tract in the S. John Pace Survey, total depth 3,655 feet, setting 6⅝-inch casing at 3,648 feet. Glasscock Brothers' No. 2 Pettus Townsite, center of Block 24, total depth 800 feet, drilling. Grayburg Oil Co.'s No. 1 S. D. Copeland, 150 feet southeast corner of north half of William Sanford Survey, total depth 200 feet, drilling. Grayburg Oil Co.'s No. 2 Kimball, 150 feet each way from southwest corner of 80-acre tract or 2,700 feet to east line, 2,100 feet to south line of survey in the Stephen Winship Survey, total depth 880 feet. George A. Henshaw, Jr.'s No. 1 Beck, 150 feet north line, 150 feet to west line of Lot 2, Hicks-Hall-Cotton Subdivision in the M. Urango Survey, total depth 3,850 feet, coring. Hill and Hill's No. 1 Roberts, center of Block 16, Pettus Townsite. location.

Houston Oil Co.'s No. 1 Newman, 300 feet from south line, 300 feet west line, 197-acre tract offset to Cosden's well in the J. A. Kerr Survey, total depth 3,683 feet. Same company's No. .. Townsite, center of Block 21, derrick. Same company's No. .. Pettus Townsite, center of block 23, rigging up. Same company's No. .. Pettus Townsite, center of Block 33, rigging up. Same company's No. .. Pettus Townsite, center of Block 35, location. Humble Oil & Refining Co.'s No. 5 McKinney, 150 feet south of south line of Pettus Townsite, direct offset to Houston Oil Co.'s No. 1 Beasley in the G. A. Kerr Survey, total depth 408 feet. Edward M. Jones' No. 1 Rapp, 990 feet southeast of northwest corner of Section 11 of Ragley Subdivision in the Jose Maria Urangua Survey, total depth 6,062 feet, plugging back, sand at 3,097-3,105 feet, will be tested. Long & Mimms' No. 1 Billingsley, 155 feet to south and west lines of Billingsley 10 acres out of 150-acre tract in the J. Pointevent Survey, total depth 380 feet. Nichola Oil Corp.'s No. 4 Hicks, 550 feet east of west line, 430 feet south of north line of Block 20, 930 feet due south of No. 3 Hicks in the Jose Maria Urangua Survey, total depth 3,660 feet, coring. Osage Oil Co.'s No. 1 Maudlin, 155 feet to north line, 155 feet to east line of east 50 acres of 200-acre tract in the J. Pointevent Survey, total depth 400 feet, setting surface casing. Same company's No. 2 Maudlin, 155 feet north line, 505 feet to east line of tract in the J. Pointevent Survey, derrick. Jean Patton's No. 1 Billingsley, 155 feet to west line, 2,250 feet to south line of Billingsley 130 acres in the B. Q. Hadley Survey, spudded and shut down for fuel. Ed Price's No. 1 Mrs. Laura E. Weiss, 200 feet out of the northwest corner of B.&B. 640-acre Survey, east of Normana 6 miles, B.&B. Survey, total depth 4,261 feet, drilling. Rio Bravo Oil Co.'s No. 1 S.A.A.P.Ry., 58 feet north of south line, 120 feet west of west line of Block 3, Pettus Townsite in the G. A. Kerr Survey, spudded in. Same company's No. 7 S.A.A.P.Ry., center of A. Smalley Survey, total depth 2,600 feet, drilling. Same company's No. 3 S.A.A.P.Ry., in the G. A. Kerr Survey, location. S. R. C. Co.'s (T. B. Slick) No. 1 B. Hodges, center of Block 37 in the G. Kerr Survey, total depth 3,901 feet, showing oil, setting 6⅝-inch casing.

S. R. C. Co.'s No. 1 A. Theis, 2,700 feet from north line, 300 feet from west line of 782-acre tract in the R. S. Burns Survey, rigging up and drilling water well. Southerland and others' No. 1 Billingsley, 155 feet to south line, 155 feet to west line of north 40 acres, off north end of 150 acres in the B. Q. Hadley Survey, derrick. Southern Crude Oil Purchasing Co.'s No. 1 M. Dahl, 887 feet from east line, 1,584 feet from north line of Mena Dahl 224-acre tract in the George Pagen Survey, total depth 3,150 feet, drilling in sandy shale. Swift and others' No. 1 Maudlin, 155 feet to north and east lines of 10-acre tract out of the Maudlin west 125 acres in the J. Pointevent Survey, derrick. The Texas Company's No. 2, J. R. Scott, 200 feet from north line, 150 feet from west line in the J. M. Urango Survey, total depth 620 feet, drilling. Union Production Co.'s No. 10 George Ray, 150 feet north, 150 feet east of the southwest corner of Block 240, G. Neil Survey, total depth 450 feet, drilling. Same company's No. 11 George Ray, 3,200 feet southwest of north corner along northwest line, 300 feet southeast at right angles from northwest line in the R. G. Millican Survey, total depth 3,815 feet, blew out 30,000,000 feet of gas, hole lost. Same company's No. 13 George Ray, 900 feet due south of Union Production Co.'s No. 1 Ray in the George Habbermacher Survey, derrick. Same company's No. 15 Ray, 150 feet to south line, 150 feet to east line of southeast corner of Pettus Townsite, total depth 2,950 feet, drilling. Same company's No. 16 Ray, 150 feet east of Pettus Townsite, offset to Glasscock's No. 1 in Block 41, total depth 1,400 feet, drilling.

Pettus Pool—Goliad County

Doctor Hewitt and others' No. 1 Ray, 200 feet each way out of southwest corner of B.&B. Survey, total depth 4,070 feet, making gas and water.

Cartwright Pool—Live Oak County

Houston Oil Co.'s No. 22 Cartwright, 500 feet east of No. 18 in the J. M. Colchado Survey, total depth 2,950 feet, drilling. Same company's No. 1 R. Boothe in the M. B. Kilvin Survey, total depth 5,257 feet, preparing to set casing.

Agua Dulce Pool—Nueces County

South Texas Production Co.'s No. 1 J. A. Daudermann, 450 feet south and north lines, 450 feet west and east lines of Block 13 of the southeast quarter of Section 32, Benton Pasture Subdivision, total depth 2,775 feet, drilling. Houston Oil Co.'s No. 1 M. E. Brooks, 330 feet from north and east lines of fractional Section 29, Benton Pasture Subdivision, Los Sauces grant, total depth 4,300 feet, drilling in hard shale. Saxet Oil Co.'s No. 1 Donegan, 700 feet north and east lines of east 240 acres of Donegan tract, total depth 4,091 feet, to be completed as gasser at present depth, making small amount of 22 gravity oil and some water. Same company's No. 6 John Dun, 600 feet south of No. 5 Dunn, total depth 3,284 feet, drilling in sandy shale.

Cole Pool—Duval County

Henne-Winch's No. 1 R. Benavides, 175 feet southwest line, 205 feet southeast line, Cole Subdivision, Mariano Arispe grant, Block 4, Survey 22, total depth 2,680 feet, drilling.

Kohler Pool—Duval County

Humble Oil & Refining Co.'s No. 41 Kohler, 2,970 feet south line, 330 feet east line, Survey 165, location. Same company's No. 47 Kohler, 1,155 feet east line, 330 feet south line, Survey 172, total depth 297 feet. Simms Oil Co.'s No. 9 Dinn, 660 feet east line, 660 feet south line of northwest of southeast of Survey 143, rigged up, standing.

Schoolfield-O'Byrne—Duval County

C. E. Long and others' (Shell) No. 1 Bishop Duval Land Co., 2,800 feet north line, 160 feet west line, Survey 59, rigging up. Magnolia Petroleum Co.'s No. 1 Lundell, 450 feet north line, 150 feet east line, southeast Survey 60, total depth 4,765 feet, drilling sticky shale.

Carolina-Texas—Webb County

O. W. Killam's (Carson) No. 6 Webster, 487 feet north line, 150 feet west line of northwest of southeast of Survey 685, total depth 1,400 feet, drilling. W. R. Shankle's No. 2 Webster, 1,170 feet west line, 150 feet south line, Survey 684, rigging up.

Cole Pool—Webb County

South Texas Production Co.'s No. 1 S. Benavides, Myrtle E. Hale Subdivision, Mariano Arispe grant, Block 24, total depth 500 feet, drilling. French Oil Corp.'s No. 1 "B" R. Benavides, 150 feet south line, 150 feet east line, Survey 661, total depth 1,800 feet, drilling. O. W. Killam's No. 19 Bruni, Adams Subdivision, Mariano Arispe grant, Block 1, Survey 8, derrick. O. W. Killam's No. 5 Bruni, 270 feet northwest line, 203 feet southwest line, Adams Subdivision, Mariano Arispe grant, Block 26, Survey 8, total depth 2,855 feet. Magnolia Petroleum Co.'s No. 3 A. Benavides, 550 feet north line, 150 feet east line, Survey 660, total depth 2,342 feet, set 8⅛-inch casing. Same company's No. 4 C. Benavides, 150 feet south line, 150 feet west line, Survey 662, total depth 2,350 feet, bailing.

Charco Redondo—Zapata County

C. R. Moore & J. W. Moore's No. 1 Adlea G. de Flores, 330 feet northwest line, 330 feet northeast line, E. M. Doty Oil & Gas Subdivision, Block 99, Char-

co Redondo grant, total depth 150 feet, spudded in, set 10-inch casing 150 feet. Same parties' No. 2 Adela G. de Flores, 150 feet northeast line, 150 feet southeast line, E. M. Doty Oil & Gas Subdivision, Block 151, Charco Redondo grant, total depth 50 feet, standing. Mid-West Public Utilities Co.'s No. 1 Gracia, 450 feet southwest line, 450 feet southeast line of M. P. de Garza tract, Block 33, Pedernal grant, total depth 1,381 feet, standing.

Jennings-Muckelroy—Zapata County

Alamo Drilling & Leasing Co.'s No. 3 Trevino, 510 feet south line, 150 feet west line, Block 1, Survey 66, location. Same company's (Blair) No. 3 Trevino, 750 feet east line, 150 feet north line, Block 1, Survey 66, total depth 1,226 feet, coring. Same company's No. 4 Trevino, 150 feet west line, 150 feet north line, Block 1, Survey 66, location. Grimm & Yakey's No. 1 M. Trevino, 510 feet north line, 150 feet west line, Block 5, Survey 412, derrick. Same parties' No. 1 E. Bustamente, 382 feet southwest line, 150 feet southeast line, Share 7, Fansler Partition, Comitas grant, location. Same parties' No. 1 S. Bustamente, 990 feet northeast line, 150 feet northwest line, Share 34, Fansler Partition, Comitas grant, location. Same parties' No. 1 C. Bustamente, 150 feet northeast line, 1,300 feet northwest line, Share 33, Fansler Partition, Comitas grant, total depth 1,332 feet, standing. Same parties' No. 2 C. Bustamente, 150 feet northeast line, 150 feet southeast line, Fansler Partition, Comitas grant, Share 33, location. Nordan & Morris-Allen & Morris' No. 3 E. Gutierrez, 4,263 feet southeast line, 750 feet northeast line, Share 4, Fansler Partition, Comitas grant, derrick. Allied Gas Co.'s No. 2 B. M. Trevino, 1,533 feet southwest line, 150 feet northwest line, Block 15, Survey 65, derrick. W. R. Shankle's No. 2 E. Gutierrez, 600 feet northeast line, 2,989 feet northwest line, Share 4, Fansler Partition, Comitas grant, total depth 1,240 feet, sand. Same party's No. 3 M. Trevino, 150 feet northwest line, 150 feet northeast line, Block 14, Survey 65, derrick.

S. R. C. Co.'s (Trinity Drillers, Inc.) No. 2 "A" Trevino, 490 feet east line, 150 feet north line, Block 8, Survey 66, total depth 1,200 feet, set 6⅝-inch casing. Same company's No. 1 F. Cuellar, 150 feet northwest line, 150 feet northeast line, Block 7, Survey 65, derrick. Same company's No. 2 "B" F. Cuellar, 150 feet northwest line, 1,290 feet southwest line, Block 12, Survey 65, derrick. Same company's No. 3 "B" F. Cuellar, 150 feet northwest line, 150 feet northeast line, Block 7, Survey 65, rigging up. Same company's No. 4 "B" F. Cuellar, 150 feet northeast line, 490 feet northwest line, Block 7, Survey 65, derrick. Same company's No. 5 "B" M. Trevino, 150 feet southwest line, 150 feet southeast line, Block 13, Survey 65, derrick. A. L. Edgington's No. 5 I. G. Trevino, 450 feet south line, 150 feet west line, Block 26, Survey 412, total depth 1,230 feet, slopped over, estimated 200 to 250 bbls. J. G. Nix & R. F. Blankenship's No. 1 G. T. Montemayor, 150 feet south line, 150 feet west line, Block 1, Survey 64, total depth 1,277 feet, sand. Winch & Henne's No. 1 Jose Bustamente, 150 feet southwest line, 150 feet southeast line, Share 35, Fansler Partition, Comitas grant, spudded in. Wicker, Arnold & Ahler's No. 2 M. Garza, 150 feet northwest line, 150 feet northeast line, Block 1, Subdivision Zorro Ranch, Comitas grant, total depth 600 feet, drilling.

Jennings-Cuellar—Zapata County

O. W. Killam's (Killam-Duggan) No. 17 "B" Cuellar, 150 feet south line, 150 feet southwest line, Survey 277, location. O. W. Killam's No. 1 A. Martinez, 450 feet west line, 450 feet south line, Survey 120, total depth 1,800 feet, lime rock. O. W. Killam's No. 24 Cuellar, 2,926 feet northwest line, 150 feet northeast line, Cerrito Blanco grant, total depth 1,529 feet. South Texas Production Co.'s No. 1 F. G. Martinez, 2,878 feet north line, 2,498 feet west line, Survey 6, total depth 1,651 feet, drilling. Same company's No. 9 Measles and others, 3,830 feet southeast line, 660 feet northeast line, Cerrito Blanco grant, total depth 1,756 feet, drilling.

USE OF CREOSOTED PINE POLES SHOWS QUITE MARKED EXPANSION

By R. E. Meyers
In Charge, Department Chemistry and Tests, International Creosoting & Construction Co.

Recent years have seen a marked expansion in the use of creosoted pine poles over the entire country. Among the various species they have moved steadily upward, until now more creosoted pine is used annually than any other kind of pole.

The United States Department of Agriculture Technical Bulletin No. 158, "Comparative Strength Properties of Woods Grown in the United States," gives comparative figures which are index numbers to the relative strength of the various kinds of wood. The following strength relationships of species commonly used for poles are quoted from that bulletin:

Species of wood—	Index number indicating relative strength of the species
Longleaf pine	106
Shortleaf pine	97
Loblolly pine	93
Chestnut	68
Western red cedar	60
Northern white cedar	50

Taking the southern yellow pine group as 100, northern white cedar is 50.7 per cent, western red cedar is 60.8 per cent, and chestnut is 68.8 per cent as strong as southern yellow pine.

While the foregoing is based on tests of small clear pieces and therefore is not directly applicable to poles, the figures do represent the best authoritative published index to the relative strength of the pole woods. The American Engineering Standards Committee has been conducting an intensive study of actual pole tests and will later release figures giving modulus of rupture data as determined by these tests. These figures are not now available, but when published should be recognized as standard for fiber strength of the pole woods. In line construction, practical advantage is taken of the great permanent strength of creosoted pine in one of two ways—either by using smaller poles, or by using longer spans than when building lines with woods of other kinds.

Empty Cell Treatment

As to developments in treating processes, one of the largest users of poles, the Bell System, changed last year from 12-pound full cell to 8-pound Rueping empty cell treatment, the treatment that for several years has been used by many of the oil companies for poles used in their pipe line communication systems. In this latter process, the poles come from the treating cylinders with the wood cells partly empty, whereas the former process left them full of creosote. The result is a better protected pole because of a deeper penetration of the creosote, a more even distribution of the preservative per pole, and a dryer, cleaner pole for use on city streets.

From the standpoint of the creosoted pole manufacturer, it has the further advantage that the treating industry by reason of the purchaser's demands instead of having two treatments is able now to present a solid front, in that for pole treatment, 8 pounds of creosote treated by the Rueping empty cell process is used in the vast majority of cases. (Where pole lines go through swamp lands, or under climatic conditions similar to those of the tropics, consideration should be given to the use of a greater quantity of creosote per cubic foot of wood.)

Termites In All but Three States

A recent government report announced that termites have now been found in all but three states of the Union, namely North Dakota, South Dakota and Vermont. So prevalent are these attacks that the writer will make the rather broad assertion that within half a day after hearing a statement of this kind, any group interested in timber treatment can be shown white ant attacks in untreated wood in active service. This, of course, excludes the three states named.

It seems that with the thinning out of the forest areas, which are the natural habitat of the termite, they have sought other shelter and as a result dwellings and untreated pole lines are attacked. Termites work rapidly and dangerously; often there is no outside indication of their presence. In some severe cases, at Beaumont, Tex., for example, untreated poles collapsed in three years from this cause. Not only are the lines damaged, but the poles act as direct highways by which an infestation can spread from one section to another.

Government tests have established that the creosoting of wood protects it for at least 20 years from termite attacks. A N.E.L.A. report states that "So far as is known, termites have not attacked a creosoted pole by eating their way through creosote."

A new type of roof for poles is receiving increasing notice. This roof drains water better than the type usually used, and it can be applied at lower cost than the former roof. With this type, poles check less at the top.

Pretreatment of Poles

Pretreatment of poles was originated by one of the creosoting companies to meet the demands of the utilities industry for creosoted pine poles on a quantity-quality-prompt shipment basis. Briefly the process is this: The untreated poles, seasoning on the creosote plant yard reach the point where they are ready for treatment. If there are no orders on which they then apply (and it is literally impossible to perfectly mesh "seasoning" and "outbound orders") the poles are treated Rueping empty cell with 4 pounds of creosote final retention per cubic foot. They can then go back to the storage yard perfectly protected against season-decay by the 4 pounds of creosote. Later when an order is received on which the poles will apply, they are framed, and then re-treated. If the customer's order is for an 8-pound treatment, 4 more pounds of creosote per cubic foot are injected into the pole, the Rueping process again being used.

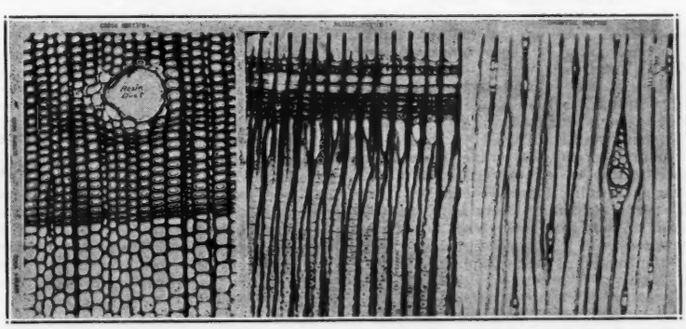
Pretreatment prevents framing after treatment; it removes any incentive to hold untreated poles on the seasoning yard until decay begins in them; it is an economy to both the utility company and the creosoter.

Increasing Labor Costs

There is sometimes a tendency to look askance at the purchase of high-grade poles whose life is known to average 30 or 35 years, when the line may not be used for that long a period. Yet the untreated pole, or the undertreated pole, purchased for an expected life of the shorter period, begins to require replacements early, on the basis of normal proved mathematical averages. The higher timber and labor costs that are indicated for a few years hence may more than offset the larger initial investment in poles of long life.

PINE UNDER THE MICROSCOPE—(Magnification 250 diameters)

Cross Section *Radial Section* *Tangential Section*



—Photographs by U. S. Forest Products Laboratory.

Wood is composed of individual cells. Pine is the strongest of the commonly used pole species. Note its tube-like structure. (Cross section shows wood-cells as viewed endwise.) The resin ducts carry and store resin in the living tree. During treatment they act as important passageways for the preservative.

The radial section shows the wood cells as viewed lengthwise. Note the perfect interlocking of the two series of cells between C and C'. Pine is flexible yet exceedingly high in strength. The bordered pits (b) are minute openings in the cell walls—valves by means of which the preservative moves sidewise from cell to cell.

Again showing the tube-like wood cells, viewed lengthwise. In Rueping empty-cell treatment, a large quantity of creosote is forced into these cells, thus giving a deep penetration of the preservative. Toward the end of the treating process the excess preservative is withdrawn, leaving the wood-cells partly empty. A gross injection of 16 to 20 pounds of creosote is obtained, when only 8 pounds of creosote per cubic foot are left in the wood.

CAR DESIGN AND GASOLINE PROPERTIES

(Continued from Page 38)

test for gum was the so-called "copper-dish test" which involved evaporating 100cc. of gasoline in a copper dish on a steam bath, drying it to constant weight, and weighing the milligrams of residue. It is very generally recognized (23, 24), however, that this method of testing is extremely difficult to check and that its results are frequently not at all comparable to service conditions.

Voorhees and Eisinger did a great deal to clarify this situation by their paper (25) presented before the American Petroleum Institute in 1928, which showed that there are really two separate problems in the determination of gum: first, the quantity of gum actually present in a gasoline at a given time, which can be determined by evaporating the gasoline in the absence of air, as first suggested by Cooke (26); and second, potential gum or gum-forming constituents whose presence in gasoline causes it to form actual gum on storage in contact with air. The work of these authors also showed that it was only actual or pre-existent gum which deposited in an engine under service conditions, the time of evaporation apparently being too short to produce additional gum from the gum-forming constituents under these conditions. The Cooke test or similar methods of evaporation in the absence of air therefore gives the best indication of the suitability of a gasoline which is to be used very shortly after testing.

On the other hand, if a gasoline is to be stored for some time before using—even if this storage be in the customer's own tank—attention must be paid to the gum-forming constituents present in the gasoline. The copper dish test does give some rough indication of these gum-forming constituents because of the exposure to air during the evaporation, but it fails to distinguish between actual gum and potential gum and gives variable results due to the practical impossibility of standardizing the rate of evaporation or the circulation of air over the surface.

Two methods were proposed by Voorhees and Eisinger for the determination of gum-forming constituents—one an oxygen absorption test in which the gasoline was held at 210° F. in the presence

of oxygen under moderate pressure, the rate of oxygen consumption being measured; the other involved heating the sample with oxygen under pressure under specified conditions for a definite period of time and noting the amount of actual gum present at the end of the time. The first test is specially instructive in that it shows that the rate of oxidation of all gasolines is very slow at the start but eventually every gasoline, even though ordinarily considered to be stable, shows a rather sharp increase in the rate of gum formation. In the case of vapor phase cracked gasoline, this "period of induction" is frequently less than 100 minutes, while liquid phase cracked gasoline generally runs over 1,000 minutes and straightrun gasoline over 2,000 minutes before this increase in oxygen consumption is observed. The general shape of this curve indicates that the oxidation of gasoline and the formation of gum is an autocatalytic reaction—that is, the first products of oxidation, which are probably peroxides, tend to speed up the rate of oxidation of the remainder of the gasoline. The existence of this induction period probably accounts for the great variability of results from the copper dish test, as relatively small variations in the time of exposure might easily make large differences in the amount of gum formed.

Of course, the time required to give similar amounts of gum formation in actual storage at ordinary temperatures is undoubtedly several hundred or a thousand times as great as that in the presence of pure oxygen at these elevated temperatures, but this test should give a reasonably good degree of co-ordination with the behavior of the gasoline in storage.

Voorhees and Eisinger's general conclusions are substantially confirmed by several recent investigators (27, 28, 29). Wagner and Hyman (29) point out that Voorhees' actual gum in solution is in a somewhat different chemical or physical state from that which is left on evaporation and therefore prefer to call the former "pseudo gum," though this does not in any way affect the validity of the test.

Egloff, Faragher and Morrell (30) report that gum formation in storage and also loss of antiknock can be prevented by adding certain inhibiting agents to the gasoline, and this is confirmed by Voorhees (31). This may very likely lead to the elimination of the gum problem in the future.

No gum test has as yet been standardized by the American Society for Testing Materials, but its committee on gasoline is actively working on this subject and it is probable that two standard tests along the lines of those above mentioned will be worked out in the near future. As to the proper limits for these tests there is as yet insufficient information to permit the drawing of definite conclusions, though Voorhees and Eisinger indicate that the limit for actual gum should be about 10 mg. per 100 cc. and that for a gasoline to be safe for a year's storage its oxygen gum test should not show over 10 mg. per 25 cc. However, Herthel and Apgar's results (28) indicate that some other factors may be involved in gum formation in storage, especially in the presence of light.

Gravity Test

One of the few rewards for the work involved in preparing a paper such as this is the opportunity to pay one's respects to "gravity," which was once the only test or specification for gasolines and still remains embodied in some state laws, though all technologists agree as to its lack of significance from a practical standpoint.

The facts regarding the significance of the gravity of a gasoline are very simple and indisputable—of two gasolines made from the same crude the one which is lighter, and hence higher in Baume or A.P.I. gravity, will have a greater average volatility, though whether or not this will be reflected in easier starting, more vapor lock, or less crankcase dilution depends entirely on the distillation range, of which the gravity gives no indication. On the other hand, as between gasolines of similar distillation range made from different crude oils or from different kinds of cracking operations, it is almost always true that the heavier the gasoline the higher are its antiknock rating and fuel value per gallon, so that with government specifications and commercial practice rather closely limiting the boiling range of most motor gasoline, it is generally true that the customer who selects a high gravity gasoline gets a poorer product from the standpoint of knocking and of fuel economy than the man who picks the heavier gasoline. This affords an excellent illustration of the undesirable results of adopting a test simply because it is easy to make, without regard to its actual bearing on performance.

Corrosion Test

Certain gasolines contain substances which are likely to cause corrosion or scaling of steel or other metals. The use of such gasolines for any considerable length of time is likely to cause troublesome clogging of lines or screens, undue enlargement of the carbureter jet, and in some cases eating out of some important part of the fuel system. Dissolved sulphur and hydrogen sulphide are the two worst offenders in this respect, but both of these substances and anything else likely to cause corrosion in service can be readily detected by the A.S.T.M. Tentative Method of Test for Detection of Free Sulphur and Corrosive Sulphur Compounds in Gasoline (D 130-27 T) which involves heating a polished copper strip in contact with gasoline for three hours at 122° F. and noting any marked discoloration. The copper-dish test gives a much less reliable indication of the same general nature. It should be understood that the corrosion test is entirely independent from the test for total sulphur content discussed later.

Doctor Test

The doctor test is an old standby which owes its popularity more to its simplicity and appeal to the eye than to any great merit. For this reason the American Society for Testing Materials has never standardized the test, which consists in shaking the gasoline with an alkaline solution of lead oxide, usually with the addition of some sulphur. It affords a simple means of detecting the presence of mercaptans or dissolved hydrogen sulphide in a gasoline. It thus fails to detect one of the most common corrosive substances (dissolved sulphur) but gives a striking test for mercaptans, which are, in general, not corrosive. However, the removal of mercaptans and hydrogen sulphide is a simple matter which is carried out by practically all large refiners, largely to improve the odor of the gasoline. There can therefore be no serious objections to the doctor test but it must not be considered a substitute for the somewhat more difficult corrosion test.

Total Sulphur Content

The significance of the total sulphur content of a gasoline and the desirability or undesirability of the government limit of 0.1 per cent sulphur has been the subject of controversy for several years. In refining gasolines made by cracking high-sulphur crude oils, or gas oils, it is frequently quite difficult to reduce the sulphur content below the government specification of 0.1 per cent without incurring refining losses as high as 10 or 20 per cent, and refiners handling this kind of oil have therefore raised the question as to whether the practical value of the sulphur specification is sufficient to justify such large refining losses, pointing out that many European countries have no such specification and that some refiners have put out high-sulphur gasolines for considerable periods without complaint.

On the other hand, practically all of the real investigational work reported has shown that gasolines containing much over 0.1 per cent sulphur are likely to cause serious corrosion under certain conditions. This corrosion due to total sulphur content does not occur in the fuel induction system but in the engine and crankcase and occurs only when conditions are such as to permit the condensation of water on the cylinder walls or in the crankcase. This water dissolves a certain amount of sulphuric acid which has been formed by the combustion of the sulphur compounds in the gasoline; and, while amounts of sulphur below 0.1 per cent have never been found to cause any serious trouble, sulphur contents substantially above this amount have been shown to cause very rapid and serious corrosion (40, 41), especially of wrist pins, bearings, starter chains, and even cylinder walls. The widespread adoption of crankcase ventilation, control of cooling water temperature, etc., have greatly reduced the likelihood of water condensation and the danger of such corrosion in most of the newer cars. However, the time has not yet arrived, at least in the northern half of this country, when it can be said with any degree of confidence that it would be safe to make any substantial increase in the present limit on total sulphur content (42). The Bureau of Standards is at the present time investigating this subject thoroughly and they may very likely find that if the design of engines continues to improve, it may become desirable to revise this specification.

The generally accepted test for the total sulphur content of motor fuels is the A.S.T.M. Tentative Method of Test for Sulphur in Motor Fuels, Naphthas and Illuminating Oils (Lamp Method) (D 90-29 T). While its accuracy still leaves something to be desired (43, 44) it is rapid and convenient, and satisfactory for most practical purposes (45).

Color and Color Stability

Color is another property which is so easily measured†† and so apparent to the eye that it has been given a prominence greatly in excess of its actual significance, as has been recognized by the United States Government in eliminating the color test from its specifications. In general, vapor phase cracked gasolines tend to be much yellower in color and to have more gum than ordinary commercial gasolines. This fact has led many to believe that color is an indication of gum or gum-forming constituents. It has been repeatedly shown, however, that yellow gasolines may contain practically no gum and water-white gasolines may contain large quantities of gum, so this method of test cannot be relied upon as a definite indication of gum. While it thus seems to have no possible bearing on performance, many marketers still insist on color specifications.

Most cracked gasolines tend to become slightly yellow on storage, which is also undesirable for marketing purposes. It has been found that holding a 4-ounce bottle of gasoline and air or, preferably, oxygen, in an oven at moderately elevated temperatures will give an accelerated indication of whether or not the gasoline will probably hold its color. Acceleration by sunlight or ultraviolet light gives different results which seem to bear little relation to change of color in ordinary dark storage.

Miscellaneous Properties

In view of the modern predominance of closed cars, a good odor is still a matter of some importance to the comfort of the passengers. Even as ambitious a body as the American Society for Testing Materials has not attempted to standardize a test for this property, though gasolines which pass the doctor test and are free from gum-forming constituents generally have a satisfactory odor, as the two foregoing tests tend to indicate the presence of the malodorous compounds most likely to be present (mercaptans on the one hand and peroxides or aldehydes on the other).

It is, of course, important that a gasoline be free from water, traces of acidic compounds, or any nonvolatile residue. However, the corrosion test will in general detect the presence of any acidic compounds, and the gum tests show up any nonvolatile residue. While small quantities of water frequently collect in an automobile gasoline tank or gasoline filter, it is more likely to come from the condensation of moisture in the gasoline tank than from water having been present in the gasoline as delivered. When a car is driven from a warm garage into the cold outside air, there is almost certain to be a small amount of moisture condensed out of the air in the gasoline tank, and this sinks to the bottom of the tank where it has little chance to re-evaporate and so gradually accumulates over a period of months and may cause occasional trouble, especially by freezing in the lines in winter.

The viscosity of a gasoline is of little direct importance, except that marked variations in viscosity (or gravity) may affect the mixture ratio delivered by a given carburetor setting, and thus indirectly affect power and economy.

Importance of Co-operation

As might be expected, almost every desirable property of gasoline—for example, high volatility, high antiknock, low sulphur content, low gum content, etc., cost money to obtain and are bound to be ultimately reflected in the cost of gasoline to the consumer. In many cases the intelligent co-operation of the automotive engineer will markedly decrease the need for such stringent specifications or prevent trouble which may result if the specification limits are exceeded, and such co-operation is certainly to the advantage of both industries and of the general public. Specific examples of important ways in which the automotive engineer can and should improve present conditions are:

More Care in Design to Prevent Overheating the Fuel Lines, Vacuum Tank, Carbureter, etc.—This care in design will decrease evaporation losses and the tendency to vapor-lock and make it possible to supply more volatile gasoline of better starting characteristics. Also the use of wide passages, and avoidance of sharp bends or high suction lifts in the gasoline lines will tend to decrease vapor-lock.

The General Use of Crankcase Ventilating Devices or Other Means of Preventing Condensation of Water in the Cylinders and Crankcases of Engines.—This means of preventing condensation will greatly reduce the need for a low sulphur content in the gasoline, and increase the amount of crude oil available for making satisfactory gasoline. It will also prevent excessive amounts of crankcase dilution.

More Uniform Cooling of Automobile Engines and the Elimination of Localized Hot Spots.—The presence of localized hot spots has been shown to greatly increase the tendency of a given fuel to detonate, especially in the case of natural hydrocarbon antiknocks. Keeping down the temperature of exhaust valves, spark plugs, piston heads, etc., should minimize detonation and make possible the use of higher compression ratios. This is an argument for liquid-cooled rather than air-cooled aircraft engines. For the same reason excessive heating of the intake air should be avoided, especially when running with wide-open throttle.

For its part, the petroleum industry can, and I am sure will, in the future furnish the automobile industry with gasoline of higher antiknock value and better antiknock stability without getting into any difficulties from gum content. It will be noted that all these improvements are related to the three testing methods which are not yet satisfactorily standardized.

†† Generally measured by the Saybolt chromometer as in the Society's Tentative Method of Test for Color of Refined Petroleum Oil by means of Saybolt Chromometer (D 156-23 T). Proceedings, Am. Soc. Testing Mats., Vol 23, Part 1, p. 682 (1923); also 1929 Book of A.S.T.M. Tentative Standards, p. 370.

KANSAS FIELDS

(Continued from Page 45)

NW SE, Section 9-21-3w, made 473 bbls. from Wilcox sand and Silicious lime 3,369-3,414 feet and 3,415-24 feet.

Sedgwick County

Shell Petroleum Corp.'s No. 1 Morris, SE cor., Section 10-26-2, is rigging up to deepen from 2,898 feet. Location has been made for No. 3-A Lygrisse, SW cor. NE, Section 15-26-2.

Sumner County

Gypsy Oil Co.'s No. 2 Enderud, NW cor. SW, Section 16-35-3w, has been completed for 1,550 bbls. in Wilcox sand 4,769-72 feet.

Buying Earthquakes in Search for Oil

Part Explosives Play in Exploration Work Brings Dynamite Manufacturers and Geophysical Research Companies Together

By C. Van A. Pittman
Geophysical Research Corp.

How much dynamite will it take to jar a seismograph 10 miles distant on the earth's surface? How big must the charge be to make a noise discernible for 10 miles down wind, cross wind or against the wind? Finally, what percentage gelatin is best to use, and will one cap, 10 caps or Cordeau prove most effective in its detonation? These are the problems that link dynamite companies with geophysical exploration work; the problems that make these companies consultants for consulting geophysical research companies.

Few people purchase dynamite just to make a noise and get a kick out of it, yet such is the business of this new profession, seismology applied to geophysical prospecting. Many have been prone to think of geophysics as some new type of art and have transferred to it some of the vague misgivings associated with the use of the divining rod. But in March of this year the American Association of Petroleum Geologists voted membership status to geophysicists of specified standards, and thus publicly placed the science in its proper professional category.

To the layman, geophysical prospecting can best be described as that branch of applied geophysics which uses laboratory instruments and methods for the purpose of measuring, from the earth's surface, the physical properties of geologic structures and strata that lie hidden somewhere below the surface. Apparatus and technique have been developed to measure such fields of force as gravity, terrestrial magnetism, electric currents and earthquake waves, and these fields of force are in turn influenced by density, magnetic permeability, electric conductivity and elasticity—the most important physical properties of rocks and strata.

Seismic work necessitates the use of dynamite and often enough of it to drive a seismic impulse a mile in depth to a point 10 miles distant on the surface. Charges vary from 50 to 2,000 pounds and sufficient noise must be produced to be detectable at the seismograph station so that its distance from the shot point may be determined after proper corrections have been made for the velocity of sound in air.

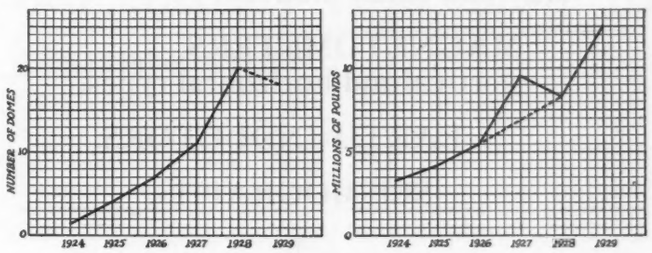
During the war a great deal was accomplished both by Germany and the Allies in developing portable field seismographs for use in locating large enemy gun emplacements behind the front. Fessenden developed his fathometer and suggested the combination of radio with elastic waves for exploratory work. Since the war, Karcher, Mintrop, Petty, McCollum and others have developed and perfected small field seismographs until they have reached their present stage of all-around general utility in geophysical exploration work.

Results of geophysical prospecting by the seismic method have varied according to the variety of problems attempted. Outstanding success has been attained on the Texas and Louisiana Gulf Coast and in southern Persia in the discovery of salt domes. In West Texas, parts of California and Venezuela, general anticlinal work has been most successful. Fault zones of Mexico, California and Texas have been proved in no uncertain manner. And in the future the same story of success will doubtless result from work in Borneo, Turkey, Russia, western Africa and South American countries where reconnaissance surveys have already been made and seismograph parties are moving in. The sale of earthquakes is rapidly becoming an international business.

Inspection of the accompanying graphs will tell the story of growth, of increased efficiency on the part of seismologists and their instruments, and of the potential business that this new branch of applied science is developing for dynamite manufacturers. These graphs refer only to Texas and the Gulf Coast, but those referring to other fields would in general show similar results. In 1929 approximately 5 per cent of the dynamite consumed in the United States went into geophysical prospecting work.

To estimate the increased oil reserve that has resulted directly from geophysical research would be folly indeed; it is enormous. But popular interest in this new branch of science has mounted steadily in the past six years, as is evidenced by the number of books* now on the market concerning it. And most significant of all is the fact that such institutions as McGill University, Colorado School of Mines and certain German universities have established their own departments to train the geophysicists of the future.

*The most inclusive annotated bibliography is found in Economic Geology, published yearly in Lancaster, Pa.



The graph, left, shows increased rate of salt dome discoveries by seismic methods on the American Gulf Coast. Of the 61 domes represented, 25 are already producing oil or gas. Many 1929 discoveries are as yet unknown to the public, so it is not possible to draw an accurate curve for last year. Dynamite consumption in Texas, based on United States Government data, is indicated at the right. The normal fate of increase reflects seismograph activity which began in 1924; the peak in 1927 was caused by an unusual amount of pipe line work.

Above—A seismograph field party follows an old Indian trail along the southern extension of the "Monument Draugh" in western Texas. Shifting dunes of white sand cover what were once ideal camping grounds, and after every windstorm they offer up arrowheads and pottery to ambitious collectors of Indian relics.

Right—Westward Ho—in 1930! Motor trucks accept the help of horses as a seismograph field party moves over the desert wastes of western Texas.

OKLAHOMA FIELDS

(Continued from Page 44)

NW cor. NE NW, Section 23-5-18, has been completed for 2,000,000 feet of gas in sand 3,220-80 feet.

Lincoln County

Thomas B. Slick Oil Co.'s No. 1 Fee, NE cor. SW, Section 7-14-4, Chandler Pool, has been completed for 2,147 bbls. in sand 5,061-5,107 feet. Magnolia Petroleum Co.'s No. 3 Staubus, NW cor. SW SE, Section 8-14-4, is dry and abandoned at 5,293 feet. The Prairie Oil & Gas Co.'s No. 3 Norton, SW cor. NE, Section 7-14-4, made 2,826 bbls. from Wilcox sand 4,987-5,001 feet.

Muskogee County

Mack Drilling Co.'s No. 5 D. Richards, SW cor. NE NW NE, Section 33-16-15, is spudding. J. L. Haner's No. 9 M. Stedham, NE cor. SE SE, Section 8-15-18, is rigging up. R. F. Ray and others' No. 1 M. Stedham, NW cor. SE SE, Section 8-15-18, is rigging up. C. F. Finefield and others' No. 2 L. Fields, SW cor. NE SE NW, Section 9-15-18, is spudding. Hale & Reynolds' No. 2 M. Sango, SE cor. NE SW NW, Section 9-15-18, is a machine. E. Mills and others' No. 1 Lowery, SE cor. NE NW NW, Section 20-15-18, is spudding. D. L. T. Co.'s No. 5 L. Mackey, SE cor. SW NE SW, Section 9-15-18, has been completed for 56 bbls. in sand 1,003-14 feet. C. F. Finefield and others' No. 1 L. Fields, NE cor. NW SE NW, Section 9-15-18, is dry and abandoned at 942 feet. J. R. Parks' No. 1 J. Rentie, SE cor. NE SW, Section 15-15-18, has been completed for 1,500,000 feet of gas in sand 997-1,023 feet. Ray & Berry's No. 1 W. Bruner, NW cor. SW NW, Section 16-15-18, is a dry hole at 1,160 feet. C. E. Creager, trustee's No. 1 Muskogee Townsite, Block 331, SW cor. NE NW, Section 35-15-18, made 40 bbls. in sand 1,062-90 feet. W. J. Metzger's No. 12 L. Francis, SW cor. NE SW, Section 1-14-18, has been completed for 20 bbls. in sand 888-908 feet. Beard & Elliott's No. 2 J. Dixon, SW cor. SE SW, Section 3-13-16, has been completed for 15 bbls. in sand 1,763-74 feet. Midwestern Oil & Gas Co.'s No. 1 J. Lacey, C NW NE, Section 31-12-19, made 2,000,000 feet of gas in sand 590-600 feet.

Oklahoma County

Thomas B. Slick Oil Co. made location for No. 1 Wespaco, SE cor. SW SE, Section 34-12-3w, Oklahoma City Field. Jones Drilling Co. is erecting the rig for No. 1 Scruggs, CWL E half NE SE, Section 35-12-3w. Wright & Smith made location for No. 2 Smith, SE cor. NW SW, Section 2-11-3w. Skelly Oil Co.'s No. 1 Harper-Turner, SE cor. NE NE NE, Section 3-11-3w, is a location. Hall & Briscoe's No. 6 Holmes, NW cor. SE, Section 10-11-3w, is a rig under construction. Indian Territory Illuminating Oil Co.'s No. 2 Lawrence-Place, SW cor. NW NE, Section 15-11-3w, is a location. Location has been made for No. 2 Phelps Heights, SE cor. NE, Section 15-11-3w.

Indian Territory Illuminating Oil Co.'s No. 5 Theimer, NW cor. SW SE, Section 1-11-3w, has been completed for 1,044 bbls. in sand 6,128-6,388 feet. No. 4 A. Brokaw, SE cor. NE NE, Section 13-11-3w, made 775 bbls. in Arbuckle lime 6,055-6,397 feet. No. 1 Reneimer, SW cor. NE NW, Section 14-11-3w, has been completed for 3,755 bbls. in sand 6,470-6,520 feet. Sinclair Oil & Gas Co.'s No. 1 Donnell, SE cor. NE NW, Section 23-11-3w, made 3,060 bbls. in sand 6,351-97 feet. Indian Territory Illuminating Oil Co.'s No. 2 Peterson, SE cor. SW, Section 25-11-3w, has been completed for 9,904 bbls. in sand 6,400-6,642 feet. Sinclair Oil & Gas Co.'s No. 15 School Land No. 54, NE cor. SW NE, Section 36-11-3w, made 7,370 bbls. in sand 6,440-75 feet. No. 16 School Land No. 54, SE cor. SW NE, Section 36-11-3w, has been completed for 15,545 bbls. in sand 6,556-6,635 feet. Indian Territory Illuminat-

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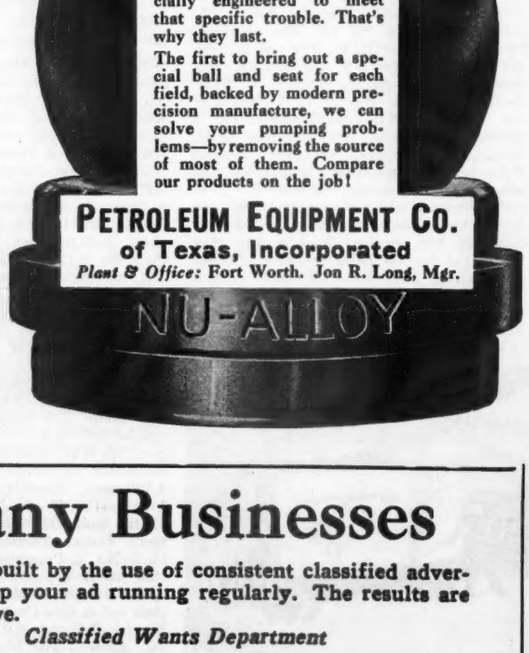

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ing Oil Co.'s No. 4 Sudik, SE cor. NE SW, Section 31-11-2w, flowed 16,199 bbls. from Wilcox sand 6,495-6,660 feet. No. 7 Sudik, SW cor. NW SW, Section 31-11-2w, has been completed for 10,933 bbls. in Wilcox sand 6,654-6,694 feet.

Okfuskee County

Atlantic Oil Producing Co.'s No. 2 Brook, CSL NE SW, Section 36-12-10, is rigging up to deepen. Wells and others' No. 1 Stilwell, SE cor. NE NE, Section 14-10-11, is a machine rigging up. The Prairie Oil & Gas Co.'s No. 1 Davis, NW cor., Section 9-13-10, made 145 bbls. in Wilcox sand 3,370-97 feet.

Okmulgee County

Tiffany Oil Co.'s No. 3 Long, SE cor. NW SE, Section 25-16-11, is drilling at 1,600 feet. Cherokee Public Service Co. moved a machine in for No. 2 Verner, SE cor. NE, Section 35-16-17. Eagle-Picher Oil Co.'s No. 1-A Sullivan, C SE, Section 8-12-12, is drilling at 900 feet. S. J. Mathews' No. 1-A Hughes, NE cor., Section 21-16-11, has been completed for 10 bbls. in sand 2,443-60 feet after plugging back from 2,948 feet. Le Bean Drilling Co.'s No. 7 Bruner, C NE SW, Section 23-15-11, made 12 bbls. in sand 1,820-55 feet. W. B. Pine's No. 1 L. Doyle, NE cor. SE NW, Section 18-15-13, is dry and abandoned at 2,738 feet. F. Sheedy's No. 16 H. Myers, NE cor. SE SW, Section 23-13-14, is a dry hole at 1,288 feet.

Payne County

Bankston and others' No. 1 Lorett, NE cor. NW, Section 2-18-6, has spudded and shut down. Twin State Oil Co.'s No. 1 Davis, NE cor. NW NE, Section 20-19-5, made 40 bbls. in sand 3,834-74 feet.

Pottawatomie County

Transcontinental Oil Co.'s No. 1 Miller, SE cor. NE NE, Section 22-6-3, West Asher Pool, has been completed for 1,927 bbls. in sand 3,518-33 feet.

Osage County

Carter Oil Co.'s No. 12, C SW SE, Section 28-25-9, is a cellar. The Texas Company's No. 9, CNL S half NW, Section 36-23-10, is a machine rigging up. Devonian Oil Co.'s No. 3, NE cor. SW SE, Section 30-21-10, is rigging up. Hill Drilling & Developing Co. moved a machine in for No. 2, NW cor. SE NW, Section 29-21-11. Oklahoma Natural Gas Co.'s No. 1,799, NW cor. SW SE, Section 30-21-11, is a machine. Peters Petroleum Corp.'s No. 13, SW cor. NW NE NW, Section 17-27-6, is dry and abandoned at 3,059 feet. Indian Territory Illuminating Oil Co.'s No. 434, SW cor., Section 22-27-11, has been completed for 1,500,000 feet of gas in lime 1,851-67 feet. Peters Petroleum Corp. and others' No. 1, SE cor. SW, Section 8-25-9, is a dry hole at 2,290 feet. Indian Territory Illuminating Oil Co.'s No. 409, NE cor. SE, Section 6-24-9, has been completed for 3,500,000 feet of gas in Oswego lime 1,920-39 feet. Mid-Co Oil Co.'s No. 23, SE cor. NE SE, Section 18-22-10, made 10 bbls. in Oswego lime 1,365-85 feet.

Pawnee County

Thompson & Black moved a machine in for No. 3 Mote, SW cor. NE NW SW, Section 14-20-9. No. 2-A Mote, NE cor. NW NW SW, Section 14-20-9, has been completed for 2,000,000 feet of gas in Layton sand 943-54 feet.

Stephens County

Sykes and others' No. 2 Broadbent, SE cor. NW, Section 16-1s-8w, is rigging up. Wirt Franklin Petroleum Corp.'s No. 3 School, NW cor. SW SW SW, Section 36-1s-10w, made 15 bbls. in sand 2,180-2,202 feet.

Seminole County

Magnolia Petroleum Co. has the rig on the ground for No. 5 Grounds, NE cor. SE NW, Section 23-9-5, South Earlsboro Pool. The Texas Company made location for No. 1 Eliza, NE cor. NW SE, Section 19-7-8. Crosbie & Moran's No. 1 Caesar, NW cor. SW NW, Section 28-6-6, Konawa Pool, is a cellar. L. Neal and J. F. Milton made location for No. 1 Thomas, NW cor. NE SW, Section 9-6-7. Carter Oil Co.'s No. 6 Chowning, SE cor. SW SW, Section 19-9-6, flowed 400 bbls. from Wilcox sand 4,191-4,209 feet. Culbertson and others' No. 1 Blankenship, SW cor. SE SE, Section 10-8-5, Carr City Pool, is dry and abandoned at 3,855 feet. Deep Rock Oil Corp.'s No. 1 Johnson, SE cor. NW NE, Section 30-8-8, swabbed 112 bbls. in sand 3,237-58 feet. Independent Oil & Gas Co.'s No. 5 Okfuskee, NE cor. SW NW, Section 16-6-6, Konawa Pool, has been completed for 90 bbls. in sand 2,865-2,905 feet. Mid-Continent Petroleum Corp.'s No. 3 P. Harjo, SE cor. SW SE, Section 20-6-6, flowed 2,885 bbls. in four hours from sand 2,861-2,924 feet. No. 4 P. Harjo, SW cor. SE, Section 20-6-6, made 4,515 bbls. in sand 2,859-2,939 feet. Empire Oil & Refining Co.'s No. 1 Caesar, SW cor. NE SW, Section 21-6-6, made 3,500,000 feet of gas in sand 2,680-95 feet. Magnolia Petroleum Co.'s No. 1 Sakteka, NW cor. SW NE, Section 31-6-8, is dry and abandoned at 2,840 feet. No. 1 W. Palmer, NE cor. SE SW, Section 31-6-8, is dry and abandoned at 4,617 feet.

Tulsa County

Holmes & Burton and Johnson Refining Co.'s No. 2 Brightman, CSL NE NE, Section 30-19-10, is spudding. L. B. Jackson's No. 1 Marley, CEL SE SW, Section 31-19-11, is rigging up. Pure Oil Co.'s No. 2 Brightman, CNL SE NE, Section 30-19-10, has been completed for 100 bbls. in sand 2,218-28 feet.

Wagoner County

R. L. North's No. 4 W. Kanard, SW cor. NE SE, Section 31-18-17, is drilling at 390 feet. No. 3 W. Kanard, SW cor. NE SE, Section 31-18-17, has been completed for 1,333,000 feet of gas in sand 406-09 feet.

Grant County

Argo Oil Co.'s No. 2 Howell, SE cor. SW SW, Section 14-27-3w, has been completed for 35 bbls. at 4,540 feet after plugging back from 4,560 feet.

Kay County

Boucher and others made location for No. 1 Jefferson, NE cor. SW, Section 32-26-1w.

Noble County

Gypsy Oil Co. and others' No. 1 Bergstram, SE cor. NW, Section 28-22-1w, is dry and abandoned at 5,644 feet. Magnolia Petroleum Co.'s No. 4 Sams, SE cor. SW SW, Section 15-21-2w, has been completed for 150 bbls. in Wilcox sand 5,139-85 feet.

CALIFORNIA FIELDS

(Continued from Page 56)

in several months ago and which is still flowing 860 bbls. of oil and 26,000,000 feet of natural gas.

The General Petroleum has successfully finished No. 6 Erburu, a new well in the Capitan Field of Santa Barbara County, and this project is pumping 112 bbls. of clean 20.9 gravity oil per day from 1,373 feet, the hole having been finished with a 9-inch oil string landed at 1,325 feet. No. 7 on this lease has just been spudded in and while the General Petroleum will be obliged to continue normal development work, these new wells are shut in immediately subsequent to completion. The Shell's No. 1 Orella at Capitan has reached a depth of 2,273 feet but looks like an early abandonment as the Vaqueros, which was topped at 2,205 feet, has so far been found barren. The Vaqueros Major Oil Co., operating in the Lompoc area of Santa Barbara County, has finished its No. 1 Union Annex at 2,996 feet and while a conclusive test has not yet been made due to the lack of storage, it looks good for somewhere between 250 and 500 bbls.

CANADIAN FIELDS

(Continued from Page 51)

berta company has a 40-acre tract. Drilling will be started this summer.

Drilling in the Foothills

On the Waite Valley structure, west the Turner Valley, Richfield Petroleums' No. 1, LSD, Section 25-20-4w5, has been definitely abandoned following the striking of a fault at 4,765 feet. Innerfold Oils' No. 1, LSD 2, Section 6-20-3w5, is reported shut down at 4,695 feet.

On the Highwood structure, Western Alberta Oil Co.'s No. 1, LSD 11, Section 7-17-2w5, is still standing at 3,878 feet, with a little light crude seeping into the hole from the Madison lime. Hudson's Bay Oil & Gas Co.'s 1, LSD 8,

Section 1-18-3w5, is at 2,774 feet w[illegible] drilling.

The Prince of Wales is reported to have secured mineral rights on approximately 3,560 acres, in connection with a recent purchase of additional surface rights in the vicinity of the F. P. ranch south of the Highwood area.

In the southern foothills, Source Rock Petroleums, Ltd., is reported hauling material for a test on the Watson structure.

Cotton Belt Mines, Ltd., of Vancouver, British Columbia, which recently secured acreage in Alberta is reported preparing to start a test before the end of August in Section 21-24-4w5, in the Fisher Creek area of southern Alberta, where the company has secured 560 acres.

Border Fields

Operations of Franco Oils, Ltd., which was planning to drill in the Cardston area have been delayed owing to the death of the geologist, Mr. Woods; but No. 1 test will be started this fall, probably in October, on a location about a mile from Cardston. John S. Smith and J. Y. Card of Cardston are interested.

In the Keho Lake area, Hudson's Bay Oil & Gas Co.'s Keho No. 1, LSD 2, Section 17-11-22w4, is drilling below 410 feet. In the Lomond district, Hudson's Bay's Lomond No. 2, LSD 1, Section 26-17-18w4, is drilling at 3,545 feet.

Wainwright Field

In the Wainwright Field, east central Alberta, Fabyan Petroleums, Ltd., has discontinued work on No. 1 test, LSD 8, Section 24-45-8w4, and has skidded the rig to a new location, close to No. 1. Onalta Oils' No. 1, LSD 8, Section 20-45-6w4, is waiting for production test of the sand cored at 2,230 feet, it is estimated good for about 50 bbls. a day of 20 gravity crude.

Ribstone Field

In the Ribstone Field, eastern Alberta, London-Ribstone Petroleums' No. 2, LSD 5, Section 22-43-3w4, is cored to 2,107 feet, where the core barrel indicates the coal seam marker usually found just above the oil sand. Production at this point will materially extend the proven area of the Ribstone Field. Meridian Oils' No. 2, LSD 1, Section 16-45-1w4, and Imperial Oil's No. 2 Ribstone, LSD 14, Section 9-45-1w4, are not yet on steady production, though estimated good for around 150 bbls. each. Some crude is being taken for fuel. Ribstone Oils, Ltd., is considering a refinery on the ground to handle the heavy crude.

Test Duvernay Well

On the Duvernay structure, north of Edmonton, Alberta, Pacific Consolidated's No. 1, LSD 5, Section 34-55-12w4, is at 1,750 feet with 12½-inch casing run to 1,490 feet. Some oil and gas shows encountered between the latter depth and the bottom will be tested before drilling deeper, though commercial production is not anticipated.

In the Castor district, Young Petroleums, Ltd., is reported to have let contract to a Calgary drilling company for three tests for gas. On Paint Earth Creek, an extension of this prospective field, Hudson Bay Oil & Gas Co. has derrick up in LSD 5, Section 27-39-15w4.

Test for Empress Area

Six miles southwest of Oyen, Alberta, Keystone Petroleums, Ltd., is arranging with Calgary interests to test acreage near Empress for gas to be marketed in connection with projects for supplying gas to Saskatchewan cities. A little to the northwest, Fuego Oils' No. 1, Section 34-25-4w4, in Acadia Valley, has encountered a good grade of oil with some gas at around 3,165 feet and is claimed to have a small commercial production. To the southwest, Ontario-Alberta Oil Co.'s No. 1, LSD 15, Section 34-17-8w4, has showings around 3,540 feet.

Nordon Operations

The Nordon Corp., which has extensive lease holdings in the United States and Canada, recently added to its directorate Jacques Vinmont of Los Angeles, recently president of the California Petroleum Co., and William E. Wrather, geologist, of Dallas, Tex. New Canadian directors are Manning Doherty of Toronto and Col. Victor Spencer of Vancouver, British Columbia. The company holds leases or options on 161,820 acres in western Canada, chiefly in foothills areas similar to the Turner Valley, and in southern Alberta adjacent to the Red Coulee and Kevin-Sunburst Fields. Five tests by other companies are now being drilled on its Alberta acreage. Glen M. Ruby is president.

Resources Are Transferred

Following protracted negotiations between the dominion and provincial governments affected, the British Parliament has passed an act amending the British North American Act to provide for the transfer of natural resources to the western provinces, Manitoba, Saskatchewan, Alberta and certain portions of British Columbia. The change of control will not materially affect the regulations under which oil and gas rights are administered.

British Columbia

An international structure, extending southward into the State of Washington, is being tested near Sumas, British Columbia, by the Sumas Gas & Oil Co. No. 2 test recently resumed at a depth below 500 feet after installing rotary outfit.

In the Lulu Island and Boundary Bay districts near Vancouver, the Van-Free Oil Co. is preparing to drill for natural gas. The company is headed by B. J. Freeman and associated with him are S. C. Shipley of the International Pipe Line Co. of New York and S. Orloff of the Missouri-Kansas Pipe Line Co. If production is secured it is planned to pipe the gas to Vancouver.

The area has already been tested by the Monarch Oil Co. which some years ago drilled a deep test on Lulu Island which got a small gas production. Equipment is on the ground for deepening the Monarch well, and additional tests will be drilled. Oil seepages are numerous in the vicinity and asphalt showings have also been uncovered, and it is claimed that a fair gas production can be secured within 1,500 feet of drilling.

Ontario Drilling

In Dufferin County, Ontario, F. A. Ogletree and T. E. Bull are starting a test for oil on the Ted Williams farm, E half, Lot 12, Concession 7, Mono Township. Production is expected in the Trenton limestone at comparatively shallow depth.

In the D'Clute Field, Kent County, Ontario, Union Natural Gas Co.'s No. 13, John Dawson farm, Lot 147, North Talbot Road, Raleigh Township, is drilling below 1,375 feet. Union's No. 12 Sykes farm, Lot 15, Concession 15, is rigged up.

No drilling is being done at present in the old Tilbury Field, farther west. Some weeks ago Southern Ontario Gas Co. finished a test near Port Alma. This got some gas, but was in the midst of a group of abandoned wells, so that water intruded, and the well had to be abandoned.

In Dawn Township, Lambton County, Union Natural Gas Co.'s No. 47, W half, Lot 19, Concession 1, finished a fishing job at 1,705 feet and drilled 5 feet deeper without increasing production. The well has been shut in; it is a fair gasser. No. 48 is waiting for a location.

In Onondaga Township, Brant County, Petrol Oil & Gas Co.'s No. 22 on the Six Nations Indian Reserve has been shot at shallow depth, developing a gas production of 15,720 feet. No. 11 was finished recently good for 23,640 feet.

RAILROAD MEN TO CONFER

The officers and directors of the International Petroleum Exposition will entertain passenger representatives of railroads at the exposition grounds Friday afternoon, July 25, at 2 o'clock. In inviting the railroad men for this conference W. G. Skelly, president of the exposition, said they had done excellent work in the past in increasing attendance at the oil show and it was expected they would use similar efforts in that direction this year.

PRODUCTION IN SUMATRA

Work on the fields of the Bataafsche Petroleum Maatschappij in Sumatra has relaxed since the beginning of 1930, probably on account of the general overproduction, and it seems probable that the company's wells could greatly increase their present output on demand.

It's not *guess work*— but entirely reasonable to assume that

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For lease 8,000 to 10,000-gallon cars. Immediate delivery. Write, wire or phone. HYMAN-MICHAELS TANK LINE, Inc. 20 North Wacker Drive Bldg., Chicago, Ill.

FOR SALE—8 Sweetland Filter Presses, No. 12, No. 10, No. 9, No. 7, No. 2; 1—300 H. P. Scotch Marine Boiler; Miscellaneous—Compressors. Storage Tanks, Pumps. CONSOLIDATED PRODUCTS COMPANY, 17-20 PARK ROW, NEW YORK CITY. BARCLAY 0600.

FOR SALE—MACHINE TOOLS
Bargains in used and rebuilt lathes, shapers, drill presses, pipe machines, milling machines. Five hundred machines in stock. Terms to responsible parties. Write for catalog.
Cincinnati Machinery & Supply Co.
26 West Second St., Cincinnati, Ohio.

FOR SALE
Sweetland Filters, Nos. 1, 2, 7, 9, 10; Kinney steam jacketed Rotary Oil Pumps; Plate Filter Presses; Wax Filter Presses; Tanks; Compressors; etc. STEIN-BRILL CORP., 26 Cortlandt Street, New York, N. Y.

READY FOR IMMEDIATE SHIPMENT—PRICED RIGHT
25 miles 4" O. D. plain end pipe
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Tulsa 309 Kennedy Bldg. Okla.

FOR SALE—Extra good 12x12 Ajax steam engine complete with pulley, flywheel and lubricator. Address P. O. Box 472, Chanute, Kans.

FOR SALE—Two 150 H. P. Bessemer direct connected gas engine driven compressors with 12½"x20" compressor cylinders and spare compressor cylinders 14½"x20". Engines equipped with geared governors, magnetos, air starters and pulleys. Circulating pumps, belts, air compressor, air tank and exhaust mufflers comprise auxiliary equipment. Can be purchased complete for $3,500 or will sell separately. Can be inspected and detailed description is available on request. Write Box E-225, The Oil and Gas Journal, Tulsa, Okla.

ONE 2,000 LB. BEMENT-NILES steam hammer in use less than two years. One 70 H. P. stationary boiler with stack. Above material in good condition. Larkin Packer Company, 6200 Maple Ave., St. Louis, Mo.

FOR SALE: No. 28 Star Machine 40 H.P. boiler, drilling tools and lines; located 20 miles west of Tulsa. Will sacrifice for cash. F. M. Stowell, Gen. Delivery, Tulsa, Okla.

LIQUIDATION SPECIALS.
15—Motors ranging from 200 H.P. to 15 H.P., 3/60/220; 1—100 KW Motor Generator Set, GE direct current Generator 250 volts; 1—15 Ton Crane 50' span, DC current; 2—Skinner Unaflow Engines, direct connected to 2—200 KW Crocker Wheeler generators, 125 to 250 volts, installed only 3 years. Send for complete list of Other Bargains. CONSOLIDATED PRODUCTS COMPANY, INC., 17-20 PARK ROW, NYC. BARCLAY 0600.

BUSINESS OPPORTUNITIES

LAST CALL—Just a few $100 units left, 80 acres in Shackelford, best shallow county in Texas. Three fine producing sands under 1,200 feet. Drill in position. Quick action, wonderful possibilities, experienced geologist and developer, everything favorable for big money. Act quickly. E. L. Stratton, Albany, Texas.

MINING PROPERTIES and new inventions inspected, organized and financed under declaration of trust. R. D. Ryan, Lawyer, office Shadyside, Ohio, residence, Chloride, New Mex.

BUSINESS OPPORTUNITIES

OIL holds alluring possibilities but SAFEGUARD your future by an investment in World's Most Profitable Natural Industry—SHEEP. Own your own. We care for them without expense to you and guarantee thirty per cent annual returns on your money. 25c brings you full information.
Bow Island Sheep Co.,
303 Alberta Corner,
Calgary, Alta.

SAFE AND CONSERVATIVE
Form your own company to operate for yourself in shallow oil and gas. $5,000 ample capital to start. Several producing sands, 150 to 750 feet. Pipe lines at hand, ready market, good prices. Regulation seven-eighths leases. Proven and semi-proven acreage. Flush production up to 400 bbls. Gas up to 5,000,000. Oil gravity 32 to 34. Clean-cut opportunity. Write H. B. Buddenborg, Parker, Kans.

CASH and acreage for well, 88 form leases, shallow oil field, Anderson County, Kansas. Proven and semiproven wildcat territory. New development started. W. L. Morris Loan Co., Garnett, Kans.

OIL LOCATED before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

CORE DRILLING CONTRACTOR wants new contract. Depth to 1,200 feet. Best of references. T. H. Chevalier, Box 445, Campbell, Nebraska.

HAVE THREE BLOCKS OF ACREAGE on good structure. One thousand acres Greenwood County, Kansas. Production close on 3 sides. Good proposition for wildcatters. For detailed information address Henry Pauly, 918 Fillmore St., Topeka, Kansas.

FOR SALE: 12 producing oil wells five years old on 100 acres; 3 wells on 40 acres one year old. All Berea sand wells. No. 26 Star Machine complete with tools. Good condition. E. R. Adams, 380 Grantville St., Newark, Ohio.

HAVE A BLOCK of twelve hundred acres Anderson County, Kansas. Chance for both oil and gas. Will sell offset acreage or make deal on whole block. Will start 1,300 ft. hole which will test all known sands in that county. Write for details. Box 275, Coffeyville, Kansas.

DESIRE to get in touch with Corporation or individual with capital to invest in royalties live spots Southwest and Eastern Texas. Guarantee resale part of royalties for amount sufficient to clear initial investment and still retain substantial amount of all royalties purchased. Can get correct information on all operations and will buy under drilling blocks only. Address Box E-249, The Oil and Gas Journal, Tulsa, Okla.

LISTEN OIL MEN AND INVESTORS. I rushed here from Albany to take charge of a Loving County townsite. Big oil developed close by, 34 producing wells, 14 locations last week, more in view, unlimited possibilities. Pyote, 16 miles east, went from 15 people to 3,000 in 90 days, Wink and Hobbs to 6,000 and 8,000 in six months. Better possibilities here at start. Fortunes quickly made in oil town lots. $5 known to reach $2,500 in few weeks. Houses needed, many good openings. Will sell $300 to $1,000 mortgages, 10%, security double. Believe you can make big, quick money on lots. Have oil leases, royalties, drilling blocks, lands in fee. Not broker but owner. If you want unusual investments write or wire quickly. E. L. Stratton, Pecos, Texas.

WELL drilling contractors have complete drilling rigs. Open for contract. Will go anywhere. 803 Redan, Houston, Tex. Phone Taylor, 5025.

$8.00 BUYS PART OIL 10 acres Oklahoma County. Big opportunity. Joe Milam, Oil Dept., Oklahoma City, Okla.

ATTENTION WILDCATTERS. Know of an excellent structure in Ill. Good indications for oil, open territory. Call or write A. Schneider, Teutopolis, Ill.

BUSINESS OPPORTUNITIES

7,078 WELLS REPORTED FAILURES in one year. Cannot this huge hazard be at least partly eliminated? Send for free literature. Oil and gas locating. Write Box E-246, The Oil and Gas Journal, Tulsa, Okla.

WILL EXCHANGE for producing royalty, large country home, 3 acres land, on outskirts of Illinois city of fifteen thousand; 85 miles from Chicago. Price $45,000.00.
J. P. Catlin, Ottawa, Illinois.

THE BIG MONEY in an oil proposition is made by people who have the chance to get in at the start. Those furnishing the initial capital secure the preorganization interests that yield the rich incomes of successful organizations. You can now have a part in starting an oil proposition and get a preorganization interest with as little as $25—an opportunity for a limited number planned to return the highest possible profit rate. Investigate. It will pay you. Robert Berney, 1505 Dauphin St., Mobile, Ala.

WANTED

WANTED—Well drilled, NE Mo., near Dupo, Ill. Sweetland creek shale formation. Excellent geologist report and map. Spring on this lease has run oily water for thirty years. $100.00 for lease. Write Shelburne Building Service Co., 1561 First National Bank Bldg., Chicago, Ill.

HELP WANTED

OIL REFINERY Designing Engrs., Const. and Maintenance Engrs., Pipe Line Engrs. and Designers, salary range $250-$500 month, also oil Lab. Chemists and Ch. Engrs., $150-$250. Write or wire, give age, detail exp., references. Interstate Co., Security Bldg., Denver, Colo. Built through 25 years' world-wide service largest in West.

WANTED—Man experienced in production of asphalts from Mid-Continent or similar crude. Operator, supervisor or control chemist preferred. Write Box E-233, The Oil and Gas Journal, Tulsa, Okla.

WANTED — EXPERIENCED GAS REGULATOR SALESMAN who is anxious to connect with large, long established line. All replies held strictly confidential. State age and experience, both technical and practical, in first letter. Address Box E-230, The Oil and Gas Journal, Tulsa, Okla.

CHEMISTS, Draftsmen, Designers, Oil Field Engrs., Geologists, Scouts, Production Men, Oil Refy. Oprs., Repairmen, Engrs., etc. Calls daily. Write or wire, give age, detail experience. Interstate Co., Security Bldg., Denver, Colo. Menfinders built through 25 years world-wide service. Largest in west.

LEASE SUPERINTENDENT WANTED
High class, experienced man needed to take charge of producing leases in Nowata County field now being repressured. Must be able to care for machinery and be a thorough production man. Apply by letter only, giving references and former and present employment. Address Drawer A.A., Nowata, Okla.

EXPERIENCED PRESSURE STILL OPERATORS wanted for foreign work. One year contract. Three hundred dollars salary. Apartment and transportation furnished. Unmarried men preferred. Give full details, age and experience. Address Box E-241, The Oil and Gas Journal. Tulsa. Okla.

WANTED—Graduate Engineer, experienced pressure and crude still operator and treater. State age, experience, education, and salary expected. Write Box E-240, The Oil and Gas Journal, Tulsa, Okla.

SALES ENGINEER: For piping and pipe materials. Prefer man who has had experience in refinery operation and understands oil industry requirements. Territory to be covered is Texas and bordering states. Give detailed sales experience, references, and salary requirements. Address Box E-251, The Oil and Gas Journal, Tulsa, Okla.

POSITIONS WANTED

STENOGRAPHER-TYPIST-TABULATOR
Desires work; single, middle age. Samuel O. Livingood, Route 9, Zanesville, Ohio.

LUBRICATING ENGINEER desires permanent position with responsible company. Thoroughly experienced. Two year refinery, seven year industrial oil sales and lubricating engineer. Last position seven years with major oil company. Age 29, married. Write or wire Box E-244, The Oil and Gas Journal, Tulsa, Okla.

GAS ENGINEER WITH 20 years varied technical and practical experience, specializing in high and low pressure distribution design and construction, together with all problems incidental to the sale of gas for domestic and industrial consumption, is desirous of making a new connection, either permanent or temporary. Highest references. Write Box E-243, The Oil and Gas Journal, Tulsa, Okla.

LAND MAN—Four years experience Land Dept. major company—ten years in Mid-Continent oil fields—at present royalty buyer in Texas for large royalty company—desires connection where interest in substantial oil or royalty company can be obtained for services. Familiar with current plays in Texas. Capable of taking charge of operations in state. Bank and employer's references. Address Box E-237, The Oil and Gas Journal, Tulsa, Okla.

ENERGETIC young man desires position with responsible oil company. Anything considered. Good tractor man. References. Immediate reply appreciated. Write Box E-248, The Oil and Gas Journal, Tulsa, Okla.

PRESSURE STILL OPERATOR
Fifteen years successful experience in design, operation, development and management of pressure stills and all equipment necessary for the processing of cracked distillates. Position must be one of responsibility and one where executive ability is necessary as well as practical knowledge. Address Box E-250, The Oil and Gas Journal, Tulsa, Okla.

WANTED work for 3½ ton Reo truck. 706 Juniper, Crete, Nebraska.

GERMAN GEOLOGIST and mining engineer Freiberg. 3 years experience in Colombian oil fields. Free for scientific work in South America. Actually in Colombia. Best references. Address Box E-252, The Oil and Gas Journal, Tulsa, Okla.

OIL ACCOUNTANT, age 37, 15 years experience as office manager, department head, income and ad valorem taxes, auditing, partnership accounts, purchasing, lease records, etc. Would consider individual producers entire office requirements. 1613 South St. Louis, Tulsa, Okla. Phone 3-1974.

ADDRESSES WANTED

FIVE DOLLAR REWARD for address of N. A. McDonald, cable tool driller, formerly of El Dorado, Arkansas, and Roy Jenkins, oil field worker, formerly of El Dorado, Arkansas. Crawford & Sebastin. Inc., care Hamp Smead, Exchange Bldg., El Dorado, Arkansas.

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MAPS
Send for list.
THE M. H. HUNTER CO.
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OIL DEVELOPMENT and Lease Block Maps any county in Oklahoma. Lease blocks in colors. $2.50 each county. Lindsay Map Company, Franklin Building, Oklahoma City, Okla.

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CHARTERS—Delaware best, quickest, cheapest, most liberal. Fee forms. Colonial Charter Co., Wilmington, Del.

DELAWARE incorporator. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

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WHAT have you to sell or offer? Our readers all turn to the Classified Pages.

LEASES—PRODUCTIONS

FOR SALE—Lease on Red Coulee structure, Northern Montana and Southern Alberta's new sensational Oil Field. Many new wells to be drilled immediately. Field now in production. Write us for information. Northern Investments, 903 Alberta Corner, Calgary, Alberta.

TEXAS VAN FIELD

For royalties and leases, and any and all information pertaining to the depth of sand, number of wells, initial production, dry holes, area of field, maps of field, showing number of wells in, wells drilling, gravity. Wire, write or call on me. Lute Caldwell, Indv., Grand Saline, Tex.

HAVE block of 5,000 acres oil and gas leases. Surface and subsurface geology. Three core tests already drilled show structural high of 326 feet. Also worked with magnetometer. Want $20,000 to pay rental and drill well. You to get 60% of acreage and well. Have several other good blocks in Texas. Bank references required. For details write J. A. Lockett, Marlin, Tex.

ECTOR COUNTY leases and royalty, between Ector and Winkler Pools, near Wurtz 4,000 ft. test, which topped the salt at 865 ft., 290 ft. higher than in the Penn Discovery well and higher than any well in that pool. Buy now. Anderson, Linz Bldg., Dallas, Texas.

HELP WANTED to develop for oil and gas 60,000 acres in Morgan, Fentress and Cumberland Counties, Tennessee. All located on the greatest timbered plateau on earth. All coal bearing land. One well drilled through five veins aggregating 41 feet. Tennessee coming oil and gas field. G. E. Harrison, Crossville, Tenn.

Thousands of acres Oil and Gas Leases to let on Overriding Royalty, West Ky., proven field. Many large companies operating now. Pipe lines building, also royalties and production for sale. W. S. Lowery, Salem Star Route, Marion, Ky.

WESTERN OKLAHOMA oil leases and royalties for sale. Write J. J. Sallaska, Corn, Okla.

HAVE 14,000 ACRES OIL AND GAS LEASES located on main gas pipe line in Mississippi; all regular 88 form, no rental for nine months. Will sell 35 cents per acre. Seventeen wells now being drilled in this territory. Address J. D. Slack, Jr., Box 305, Owensboro, Ky.

FOR SALE: 2,000 Acres Wayne County Oil and Gas Leases. These leases are new and are for a five year term with twenty-five cents rental after the first year. Are well scattered over the County and are a good buy at the price asked. Write A. J. McDowell, Monticello, Kentucky.

FOR SALE: 5,000 acres oil and gas leases on structure, settled production. Royalties and mineral rights on large tract. Complete data furnished on application. W. P. Harley, Bowling Green, Ky.

LEASE BLOCK: 4,500 acres for test well, Northwest corner Collin County, already blocked. D. A. McCoy, Celina, Tex.

WILL DEVELOP approved shallow oil or gas acreage. Send full information. "Sunray," 1001 Midland Savings Building, Denver, Colo.

640 acres of land for lease Andrews County, Texas, near Ogden Producer. J. Whitlock, 616 Third St., Alton, Ill.

NEW MEXICO LEASES—Lea, Eddy and Chaves Counties. H. T. Orcutt, 1014 Colcord Bldg., Oklahoma City, Okla.

FOR SALE: TEN YEAR Commercial oil and gas leases in Washita County, Oklahoma, where the play is hot. More than twenty major companies have holdings here. G. L. Romans, Mountain View, Okla.

ROYALTIES—PRODUCTION

ONE HUNDRED THOUSAND ROYALTY ACRES

I own oil royalties in fifty Texas Counties, prices from $1.50 to $5.00 per royalty acre. Correspondence invited from dealers and royalty companies only.

H. J. McMULLEN
FORT WORTH, TEXAS.

ROYALTIES—PRODUCTION

WANTED—ROYALTIES

My clients in the East are in the market for from 5,000 to 20,000 acres of low priced non-producing royalties preferably under lease to major companies with favorable possibilities for rapid enhancement in value. Also interested in some real bargains in producing royalties. Give full particulars. Address Box E-238, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE: Perpetual Deeded oil royalty under Major Oil Company leases located in the active areas of Lea County, New Mexico. Also five year State Oil and gas leases, low rental, small investment, easy terms; oil development map free. Monarch Inv. Co., Roswell, N. M.

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

ROYALTY BARGAINS in Oklahoma, Lincoln and Pott Counties for sale. American Inv. Co., 201 Elks Bldg., Oklahoma City, Okla.

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WANT TO FURNISH banks and other first class institutions with active royalty listings in Central Oklahoma. Dr. J. H. Smith, Asher, Okla.

ROYALTIES—PRODUCTION

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CITY NATIONAL BANK BUILDING
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OKLAHOMA OIL ROYALTIES
Royalty Sales Company
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Investment company has recently raised several hundred thousand dollars for royalty company. Now organizing new company and open to negotiations with owners of royalties who are willing to exchange same on basis of part cash and part stock in the company. This may lead to permanent profitable connection. Eastern representative will be in Tulsa or Fort Worth latter part of month for personal negotiations. Address Box E-239, The Oil and Gas Journal, Tulsa, Okla.

PRODUCING OIL ROYALTY OWNERS: Will buy producing royalty interests anywhere. In replying give complete description and all information regarding property. Also your best price for quick sale. Address all communications to P. O. Box 1257, Fort Worth, Texas.

BEST ROYALTY BUY in Van, Texas, oil field. Perpetual participating deeded royalty interests $100.00 each on tract Northeast of Van on structure near Humble-Carrol big well. Guy J. Stumpff, Consulting Engineer, Van, Texas.

FOR SALE

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C. H. Bailey
1712 Milam Bldg.
San Antonio, Texas.

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NATURAL GAS or OIL—Either production or distribution properties wanted. Larger the better. Negotiations confidential. Karl F. Divener, 2727 Fifth Ave., Beaver Falls, Penna.

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RANCH FOR STOCK OR RECREATION

3,606 acres, improved, operating, at base beautiful mountain range, and adjacent to Forest reserve. No trade. Mrs. Shepherd, 847 E. Colfax, Denver, Colo.

FOR SALE OR LEASE 11,322 hectares of land in Republic of Panama, bordering on Gatun Lake of the Panama Canal. Good title. Contains undeveloped coal mine with outcroppings over considerable area. Analysis of coal shows volatile matter, 35.45%; fixed carbon, 49.678%; ash, 5.61% and sulphur .363%. Good plantation land, growing bananas, pineapples and other tropical fruits. Also grazing. Survey of land shows prospect of oil. Adjacent to ocean transportation. For particulars address R. A. Schofield, Box 291, Balboa Heights, Canal Zone.

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Chicago Reports Increased Demand

Great Heat Increased Consumption Over Week-End. Demand From Country for More Spot Cars. Contract Business Good

By J. B. Waldo

CHICAGO, July 21.—The great heat of the last week has increased the consumption of gasoline. Of this there can be no doubt. The demand from the country trade for spot cars became much more active the last two days of the past week and nearly every order called for rush shipments. Sunday was a day of high temperature and large gasoline consumption but this morning's business did not fully reflect this condition. Only occasionally did a local seller report that it had an active gasoline business but all expected that tomorrow would bring many additional orders. The major refiners stated that their contract business both last week and this morning was very good and the volume of gasoline moved by them large. They were doing little spot business but there was quite an active spot demand and as stated occasionally some one would report that business this morning was the best this year. Many of the brokers claim it is useless to try and hurry business Monday morning after a good week end for it is not until later in the day that the country jobber has his stock checked and knows what he needs. Then he will place his orders, either by phone or mail.

Reports were received of added strength in the Tulsa market and it was stated that the best prices available were 6 cents for resale and 6¼ cents for the jobber. Some prices were advanced by Oklahoma refiners who quoted their trade here 6 cents for prompt delivery and would not quote for August. The major refiners continued to quote spot buyers 6½ cents for their U. S. Motor gasoline but in the open market it was possible to buy at 6 cents and even a little less from owners of gasoline bought at the reduced low quotations. There were some indications that the market for gasoline was really in a much stronger position. One of the large Illinois refineries when asked to take on an order for five cars stated that it had reduced both its runs to stills and the amount of crude to be delivered to the plant by pipe line and now was going to be short of gasoline. One of the larger distributors placed an order against its contract for 20 odd cars and wanted shipment at once on all of them. Several of the brokers are now asking 6⅛ cents for U. S. Motor gasoline and claim this is the real low price on present conditions. There was little doing in any other products other than gasoline. Kerosene is very dull. All gas and fuel oils are in light demand and moving slowly with prices for good oils fairly well maintained.

Price Situation

The local price situation last week was one of ease and it was frequently remarked that the "larger the demand the lower the price." While the usual quotation for U. S. Motor gasoline was 6 to 6½ cents, the latter being the nominal price of the major companies, much gasoline was sold at less than 6 cents and towards the close of the week, it was stated by some sellers, that the top spot price was 6 cents and that jobbers were being quoted all the way down to 5½ cents although very little business was actually done at that low price. But the common quotation to actual buyers was 5¾ cents with some holding for 5⅞ cents. The higher gravities were very dull and prices continued to be easy. Natural gasoline was quiet and lower in price.

Kerosene is still a drug on this market. The demand is very light and while there is some sale it is small and the buying is of a hesitating nature. Prices are still unchanged at 3¼ cents actual sales with some of the major companies holding for 3¾ cents for the 41-43 and 4¼ cents for the 42-44 gravities.

Domestic furnace oil has been rather neglected. There is some buying for storage but the price has to be decidedly attractive to secure these orders. The immediate demand is light, occasional cars. Prices are holding unchanged for the various products. There is a distinct demand for sweet furnace oil and some of the oils offered while generally desirable have not the good odor essential to a really satisfactory oil for burning in the home. In some cases the oil has been doctored by the addition of some material designed to cover the unpleasant odor but to many the sickly sweet smell thus secured will be as unpleasant as would be the natural odor of the oil. Some dealers are beginning to take up with some of their trade the matter of deliveries. It may seem a little early but there are many of the distributors who will, unless pressed to order, wait until they actually must have the oil and this is brought about by the first touch of cold weather. It does no harm to have some of all kinds of furnace oil in storage when the season opens and then the dealer is in position to wait until the first rush of orders subsides.

The gas maker's oil or U.G.I. gas oil seems to be just a little more firmly held. Very little that is desirable is being offered or can be bought at less than 2 cents from the refiners. There is some 30-34 that can be had at 1⅞ cents but no quantity of good 32-36 gas oil at less than 2 cents. Locally the Shell Petroleum Corp. is supplying the brokers with its U.G.I. oil at 2 cents and most of the business is being placed with the local plant. Some high grade material out of the field was bought at 2¼ cents which is the top of the market. The sellers of gas oil have been trying to induce the gas companies to fill their storage with 2-cent gas oil but the efforts made have not been resultful. In one instance a salesman spent several hours with the buyer for the gas company in one of the neighboring cities to be told finally the buyer believed it would be a good thing for them to take in at least a part of their storage in gas oil at 2 cents but that all that he could do would be to pass the recommendation to the superior officers as he was instructed not to increase inventories. Within a day or so, the buyer placed an order for 5 cars with another seller so the idea did not apparently appeal to the ones higher up of putting in a stock of gas oil. This action has been repeated several times and so far as known, the gas companies are only buying for their immediate needs.

In a general way the heavy industrial fuel oils have been holding their own but at the same time there have been some very cheap oils sold in this market. Refiners who have been in the market seem most desirous of moving their fuel oil stocks of which quite a number have considerable accumulations. The offers for the most part do not consist of zero oils which they may be holding for cold weather. The industrial buyers have in a good many cases changed their attitude and instead of insisting on a certain gravity they are asking for a viscosity which would give them a good oil for their plant. One lot of oil was offered on the market last week, which had a gravity of 14 degrees but the viscosity was 600 at 100 so that it was really a desirable oil. Refiners might bear this in mind regarding the insistence of buyers on a certain viscosity. They have an excellent argument for the lower gravities in that they make a hotter fire and the concern that can use these lower gravity fuel oils is really getting more for its money even at a parity of price and the low gravity oils can usually be bought at a lower price. The local dealers here do not feel they have covered their requirements for zero oils in any gravity but especially in the 18-22 gravity. In spite of the present trend towards lower prices they believe that when the season for zero oils comes there will be a decidedly stronger market for these oils. Today the market for an 18-22 fuel oil is hanging right around 50 cents. Both the high sulphur zero and the low sulphur with an ordinary cold test are selling at close to that price, say within a range of 47½ to 52½ cents.

The demand continues light. The railroads are still ordering the minimum under their contracts and sending their cars around the last day of the month to take in the oil.

Bright Stocks

The Pennsylvania bright stock market has firmed a little here and the eastern refiners claim that 25 cents for bright stocks in tank car lots is their best price. The western refiners are now holding their bright stocks at 28 cents so while the advantage is with the Pennsylvania material as to price the spread is more narrow than it was. There is no great activity in motor oils for the reason that so many of the jobbers secure their supplies from their gasoline source. Industrial lubs are quiet, in fact there is very little doing.

There is considerable price cutting over the territory and one or two bad spots but nothing is being done about it except to meet the cuts in price. Here in Chicago there is no end of price cutting and no motorist need to pay more than 16 cents for his gasoline. One group of stations have what they call tax free days every Saturday and Sunday on which days the station absorbs the tax. One of the owners explained that they had a special reason for doing this. He said that theirs was chiefly a trucking business and that they had little or no trucking business Saturdays and Sundays so they gave the concession on these days and filled up their motor car customers for the week. Here was a special reason for the price cutting. In fact the old idea of one price and one price only has gone by the board. A distributor who is making a dozen different prices to his trade accounts can hardly ask the public to pay but the one price. One of the largest loop holes in the Code of Trade Practices is that clause regarding commercial accounts. Accounts are today considered as commercial that a couple of years ago would never have had any such designation. The trouble with the present plan is that jobbers with few if any commercial accounts and little chance of securing any have no outlet for their gasoline except through station sales at full prices and some of them feel it is no more wrong to give the drive-in customer a discount off the list price than it is to give a discount on his monthly purchases to some commercial account.

GOVERNMENT CONSERVES SHALE OIL RAW MATERIAL FOR FUTURE YEARS

The work done at the experimental oil-shale plant until recently operated by the United States Bureau of Mines, Department of Commerce at Rulison, Colo., has demonstrated that shale oil can be produced with reasonable satisfaction from American shales by retorts of types now available for large scale operations. The availability of oil shales as a source of fuel for the United States Navy in time of national emergency has been demonstrated, according to an official report of the Department of Commerce. An important result of the work to date is that relatively large quantities of shale oil have been produced and studied by the Bureau of Mines and by many research laboratories and refineries of petroleum.

An account of the construction of the Bureau of Mines experimental oil shale plant at Rulison, Colo., during 1925 and 1926; its operation from September 17, 1926, until July 1, 1927; and the results obtained to August, 1928, from refinery studies of the oil produced, is contained in Bulletin 315 by Martin J. Gavin and John S. Desmond, recently issued. The primary purpose of these oil shale investigations was to determine the feasibility of producing shale oil for a future fuel supply for the Navy. The Bureau's experiments were conducted with two distinct types of retorts, the Pumpherston, a Scotch type, and the N-T-U., of American design and manufacture.

The oils produced by the two retorting methods are essentially similar, except that the oil from the internally fired N-T-U retort contains a smaller amount of secondary decomposition products than that produced by the externally fired Pumpherston retort, says the Bureau of Mines in a summary of the studies conducted.

The construction and operation of the plant are described in detail. Particular reference is made to the retorts, their selection, design, and erection. A full description is given also of the difficulties encountered in retorting the oil shales on Naval Reserve No. 3 and the best means of avoiding these difficulties. The nature of the products obtained from the two retorts of commercial size is described and refining studies of the oil by the bureau and several co-operating agencies are summarized.

Two Types of Retorts

The two retorts at the plant were well adapted for experimental work, and the basic design features of the retorting equipment proved to be well suited to American shales and conditions. It is probable that both retorts might be altered advantageously for commercial use, but more experimental work is needed before definite changes can be suggested.

The Pumpherston retort which exemplifies the continuous, externally fired type, has been used in commercial shale oil production in Scotland for nearly 30 years. Scottish operators consider it the most satisfactory retort ever used in that country. It is also in commercial use in France, having displaced all other types, and in Spain. A modification was used for many years in Australia, until the oil shale industry in that country discontinued operations. Its design, construction, and operation are thus well established.

The work at the experimental oil shale plant shows that the Pumpherston retort is an excellent device for experimental work on American shales.

For a single isolated retort, the flues of which were of too small an area for efficient combustion at rapid retorting rates, the capacity of the Pumpherston

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Eastern Gasoline Market Marks Time

No Likelihood of Any Immediate Upward Movement. Situation in Remainder of Market Was More Constructive

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, July 21.—The gasoline market has been marking time in East Coast territory this week, and, while feeling in the local trade continues optimistic, there is still some price cutting reported, and there does not appear any likelihood of any immediate upward movement. Demand is broadening steadily, and this, together with the indicated reduction in output by principal East Coast refiners, is expected to readjust the statistical position of the market to the point where some degree of stabilization may be effected.

Mixed trends developed in the remainder of the market, but the situation on the whole was more constructive. Paraffin wax prices rallied somewhat and there were indications of a definite upward reaction in the cylinder oil market, which has shown sharp downward price movements in recent weeks. Fuel oil appeared to be doing a little better, likewise, and Diesel oil had steadied.

A drop of 1,242,000 bbls. in refinery holdings of gasoline ending July 12 was a constructive development, with further improvement along this line looked for as a result of the reduction in refinery operations and the seasonal increase in consumption. The curtailment of refinery runs is also expected to result in a strengthening of the position of the market for other refined products.

Questionnaires have gone out from the American Petroleum Institute to refiners all over the country in pursuance to the institute's plan to ascertain actual "working stocks" of principal refined products required by the industry, and it is believed that completion of this survey will be followed by a drastic readjustment of the surplus stock position of the industry, with resultant stabilization to a degree not realized for many years back.

Refinery Gasoline

The market is a mixed affair this week. Principal sellers are holding the posted price schedule at 9 cents, with some sellers quoting up to 10 cents at refineries. The latter, however, is largely a nominal figure, and realized only on sales of gasoline of specifications in excess of U. S. Motor. There have been reports, apparently well authenticated, of sales of U. S. Motor in the tank car market down to 8 cents at refinery points, and offerings at 8½ cents are by no means infrequent. The barge market, likewise, is coming in for appreciable shading in some quarters, and the great growth of barge movement to distributing points in many sections of the East has made that market keenly competitive.

There has been a heavy movement of gasoline throughout the week, with jobbers in the market for both U. S. Motor and premium grades. Notwithstanding price shading which has developed in the tank car market during the past fortnight, jobbers continue to view the market outlook with confidence, and in most instances are keeping their storage full and adequate supplies rolling at all times.

Tank Wagon Gasoline

The situation is extremely unsettled, with price cutting more or less rife throughout the territory. Localized price wars are commonplace in many sections, and the posted price is being shaded on both the standard brands and independent products as well. In some sections of New England, the old coupon vogue has returned, with holders of the coupons entitled to discounts of 2 cents per gallon at the pump. In many other instances, independent station operators are offering premiums of one sort or another with sales of tanks full of gasoline—all amounting to price cutting in the final analysis.

There have been no changes in posted prices on the part of leading marketers, and the outlook does not indicate any upward revision in the near future.

Refiners are laying more stress on the quality of their "regular" priced gasoline at the moment, the merchandising trend having apparently swung away from premium grades for the time being. Standard Oil Co. of New York is introducing "Banner" gasoline, described as an improved "Socony," at no premium in many parts of its territory. Tide Water Oil Co. has just announced the introduction of a new premium gasoline, described as "a new and improved hi-test Tydol with Ethyl subzero knock rating gasoline."

A feature of considerable interest to gasoline marketers in this area is the expansion program which Cities Service has been quietly carrying on through Crew-Levick, numerous new Cities Service stations making their appearance in territories where the products of Cities Service have hitherto been unfamiliar to the motoring public. This development adds another major factor to the marketing fraternity in this area, and reports of a pending "invasion" by Continental Oil Co. further complicate the marketing outlook.

Kerosene

The refinery market has been featureless throughout the week. A moderate movement is reported on spot, but the market is far from stable and price cutting is pretty general.

East Coast refiners are still meeting sharp competition from inland Pennsylvania refiners on kerosene sales, the Pennsylvania sellers through price reductions cutting into territories where their offerings are not normally a market factor.

Tank wagon movement of kerosene has picked up a little, with price remaining unchanged throughout the territory.

Principal refiners in East Coast territory are reducing kerosene output, the cuts amounting from 5 to 15 per cent.

Lubs

Although the cylinder oil market has again sold off on a number of grades this week, the market tone appears definitely better, and a rally is believed in sight. The market for 600, 630 and 650 steam refined grades held steady and unchanged from the previous week's levels and some signs of an upturn were in evidence. On 600 flash, however, the market sold off 1 cent to 29 cents, with 650 flash showing a corresponding drop to 32 cents. Warren E, 600, was down 2 cents to 26 cents, with 600 Oil City E off a corresponding amount at 25 cents per gallon. Bright stocks also yielded further, being 1 cent lower at 32 cents for light and 30 cents for dark. Reports from the field indicated that most of the distressed stocks which have been depressing the market for the past month or more have been liquidated, and refiners were showing more resistance to buyers' pressure for further price cuts.

Domestic buyers' stocks of cylinder oils are considerably under normal for this season, and an early improvement in trading is indicated. The same situation prevails with respect to the export division of the market, which is expected to take on more activity in the near future.

Red and pale oils were again without feature, quotations remaining unchanged, and tank car movement holding up fairly well for this season.

Gas Oil

The posted price for 28 plus gas oil remains unchanged at 5¼ cents at East Coast terminals, but the market is far from steady. This is the off-season for gas oil and considerable price cutting is being done to move unwanted stocks, with sales reported all the way down to 4¾ cents, although 5 cents appears to be the average going figure.

California gas oil is available for shipment eastward at attractive price levels, and it is expected several cargoes will be moved to the Atlantic Seaboard during the next few months, which should tend to weaken the local market position still further. Eastern refiners, however, are curtailing output, which should tend to offset the heavier receipts of California gas oil to some extent.

Fuel Oil

Bunker "C" is quiet and unchanged at $1.15 per barrel, bulk, at refinery terminals, with a good contract movement in evidence. Refiners are more optimistic as a result of the widespread cuts in refinery runs, and little fear is entertained of any lowering of the eastern price basis.

Price cutting which developed on bunker "C" at some points in the eastern territory during the earlier part of the month appears to have died down, with all of the principal sellers back at the posted schedule. The price cutting did not involve marine sales, but was on domestic industrial oil business.

Diesel Oil

Continued firmness marks this branch with sellers adhering to the posted price of $2 at refineries, with the usual differential for barging alongside within the harbor limits. Movement is good with volume running ahead of comparable 1929 totals.

Refiners believe that the $2 basis for Diesel oil is in no danger, notwithstanding possibility of heavier shipments from the Pacific Coast, and there is a feeling in some quarters that the market may close the year above the $2 level.

There has been a pronounced increase in volume of small lot marine sales in East Coast territory this year, particularly at harbor points from Baltimore northward. This increase is attributed to the more general utilization of Diesel power in medium and large-sized pleasure craft.

Paraffin Wax

The market has taken a turn for the better and is on a somewhat firmer basis. Sales of crude scale, 1224-124 a.m.p., were made at 2¼ cents per pound, which is a quarter cent advance. Refined grades are also stronger, with 120-122 a.m.p. having sold at 2⅞ cents per pound, up an eighth cent; 125-127 a.m.p. at 3⅛ cents, also one-eighth cent per pound higher, and 133-135 a.m.p. up one-eighth cent at 4½ cents per pound. Other grades are unchanged.

Domestic consumers have come into the market for prompt shipment wax in better volume, and there has also been an appreciable increase in export inquiry.

Gulf Export Market

The Gulf market has been a dull affair with no cargo fixtures reported. There was an inquiry in the market for a part cargo, 1,500 to 2,200 tons of 64-66 gasoline, for shipment to Europe, but difficulty in securing part cargo space was expected to militate against the closing of this business.

There were no fixtures of California gasoline for export reported during the week. One or two cargoes of California gas oil were offering for shipment East at 90 cents, f.o.b. California, with the probability that 2 cents per gallon could be done on this oil on a firm bid.

No trading in Venezuelan or Mexican crude was reported.

Nothing developed with reference to any pending change in the posted price basis for export gasoline at the Gulf. A report was published locally that the association had, or would, give members permission to cut prices on export sales to meet competition. This report was generally discredited in trade circles, although no official statement regarding the rumor could be secured from Export Association headquarters.

There have been rumors in export circles for some weeks that action would be taken to permit American exporters to meet the competition from British and other operators who have been buying export grades of naphtha in the field and shipping it through a public terminal at New Orleans at prices substantially under the posted basis at the Gulf, but just how this will be done remains a mystery.

A good export movement of gasoline is reported from the Gulf for the account of the large integrated companies with foreign distributing outlets, but this business is not reaching the open market, being handled by the parent American companies at the posted schedule.

Petroleum Exports

There was a substantial pick-up in export movement of refined petroleum products from the local port for the week ended July 12 with a number of heavy shipments swelling the totals for the week. Among the larger shipments was one of 1,326,500 gallons of lubricating oil for Liverpool or London, on the Vaclite, and another of 1,100,000 gallons of refined petroleum on the Irisbank for Tientsin.

Inquiries for refined products for export were more numerous and operators were of the opinion that the balance of the summer would witness a broader movement all along the line. Much of the future of the market, however, hinges upon the partial stabilization of prices, it is emphasized.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	July 12	July 5	June 28
Gasoline	395,000	325,000	250,000
Naphtha	585,000	45,000	745,000
Kerosene	155,000	10,000	35,000
Fuel oil	30,000	53,000	180,000
Lubricating oil	2,417,000	1,405,000	1,180,000
Petroleum, ref.	1,325,000	510,000	925,000
	Pounds		
Petrolatum	150,000	.....	25,000
Paraffin wax	1,805,000	935,000	920,000
Refined	50,000	.....	275,000
Scale	60,000	490,000	.....
Lubricating grease	825,000	1,225,000	845,000

With signs of an early rally in the cylinder oil market, export buyers are showing more interest in this item, and operators here look for a substantial volume of business. Foreign buyers, it is declared, have been remaining out of the market during the meteoric drop in cylinder oils during the past six weeks, but have about become convinced that bottom has been scraped, and that prices are due for an early upturn.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended July 12 totaled 2,208,000 bbls., a daily average of 315,429 bbls., compared with 1,963,000 bbls., a daily average of 280,429 bbls., for the previous week, and a daily average of 283,500 bbls. for the four weeks ended July 12. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	331,000
Boston	7,000
New York	1,315,000
Philadelphia	333,000
Others	287,000
Total	2,173,000
Daily average	311,143

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At Gulf Coast ports—	
New Orleans and Baton Rouge..	30,000
Total	30,000
Daily average	4,286
At all United States ports—	
Total	2,208,000
Daily average	227,000
Daily average four weeks	395,000

Distribution of total imports is as follows:

Crude	1,586,000
Gasoline	227,000
Fuel oil	395,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended July 12 totaled 451,000 bbls., a daily average of 64,429 bbls., compared with 754,000 bbls., a daily average of 107,714 bbls., for the previous week, and a daily average of 76,750 bbls. for the four weeks ended July 12. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	81,000
New York	298,000
Total	379,000
Daily average	54,143
At Gulf Coast ports—	
Total	72,000
Daily average	10,286
At Atlantic and Gulf Coast ports—	
Total	451,000
Daily average	64,429
Daily average four weeks	76,750

Distribution of total California oil receipts is as follows:

Gasoline	451,000

Shipments of California refined products for Atlantic and Gulf Coast ports during the week ended July 12 (with ownership of tanker moving the oil where such owner is an oil company) follow:

To New York—65,000 bbls. of gas oil on the Tiger (Standard Transportation Co.-S.O.N.Y.).

To Baltimore—112,000 bbls. of gasoline on the Pacific Sun (Sun Oil Co.), and 79,000 bbls. of gasoline on the Thomas H. Wheeler (Standard Shipping Co.-S.O.N.J.).

To Philadelphia—116,600 bbls. of gasoline on the Sun (Sun Oil Co.).

To Boston—97,000 bbls. of gasoline on the Dixie Arrow (Standard Transportation Co.-S.O.N.Y.).

GOVERNMENT CONSERVES SHALE OIL FOR FUTURE

(Continued from Page 134)

is approximately 8 tons per day (24 hours) of shale yielding 28 to 30 gallons of oil per ton. When operating at this rate the discharged shale was completely oil spent; oil recoveries were better than 90 per cent; and enough gas was made to heat the retort during the warmer hours of the summer days. A somewhat greater throughput rate may be anticipated with certain changes in design to meet operating conditions.

The selection of the second retort for the experimental oil shale plant was directed to a type representing direct heating processes, in which combustion of the gas and the carbon of the spent shale takes place within the retort itself.

The Bureau of Mines believed that the greatest possibilities for experimental work, which might lead to important results, lay in the so-called internal combustion or gas producer type of retort. In such a retort the fixed carbon of the spent shale and part of the distillation gases are burned within the retort itself, and the hot products of combustion pass through the retort in direct contact with the raw shale above or below the zone of combustion. At least two plants utilizing this type of process have been erected and operated during recent years in the United States; both can retort well over 100 tons of shale per day, and both had been operated long enough to indicate operating characteristics and difficulties. An additional advantage in selecting retorts of the types used at these plants was that designs and working drawings were readily obtainable.

The intermittent, or "batch." downdraft type of retort, known as the "Dundas-Howes" or the "N-T-U," was therefore selected as the second retorting unit for the experimental plant. Many of the operating difficulties encountered can be overcome after further study and with the use of additional equipment. The test runs that were made, however, indicate that the internal combustion type of retort has definite possibilities for commercial retorting plants.

Important Trends

The following are the more important trends shown by the data obtained at the experimental oil shale plant with reference to the T.N.U. retort.

1. The rate of retorting varies directly with the air supply rate, inversely with the richness of the shale, and inversely with the return gas supply rate.

2. For runs in which the charge was evenly and completely retorted the percentage recovery of oil apparently varied with the gas-air ratio; that is, a high proportion of return gas in the gas-air mixture favors relatively high oil recovery.

3. The formation of clinkers apparently depends upon the nature of the shale used, the volume of air supplied, and the proportions of air and gas in the air-gas mixture. The data are too few to attempt to explain all the causes of clinkering. Slagging was most apparent with a high rate of air supply, particularly when the proportion of return gas was low.

The primary function of any retort is to produce oil efficiently. A consideration of efficiency includes (1) original cost; (2) rate of depreciation; (3) cost of operation; (4) ease of repair; (5) unit capacity; (6) effectual utilization of heat; (7) ease of control, and of course (8) ability to produce oil. The requirements of a retort to produce oil depend upon the nature of the material to be handled and of the products to be made. For example, although the commercial retorting installation will probably receive shale of almost uniform quality it will be an advantage if the retort can handle satisfactorily shales somewhat richer and leaner than the average. The ability of the retort to handle fine as well as coarse shale is also an advantage.

Ammonium compounds are made cheaply by other methods at present, and there is little probability of a shortage of raw materials for their production in the future; therefore the oil shales of the United States probably will never have great importance as sources of ammonia.

Cost of Fuel

The cost of fuel for retorting is so important that it will usually be desirable to select the shale and use retorts and retorting methods that will make the retorts self-supporting in that respect.

The cost of the retorting equipment is always an expensive item of plant construction. In effect the function of the retort is to produce oil from a material that yields 8 to 24 per cent by weight of usuable product; the remainder (76 to 92 per cent) is waste. If the throughput of the retort is reduced, the fixed charges of retorting are increased per unit of oil obtained or per unit of shale retorted.

In the opinion of the authors, therefore, the retort in final analysis is a concentrating device whose purpose is to separate the oil product from the shale as rapidly and efficiently as possible, with no more secondary decomposition within the retort than may be necessary to make enough gas for retort fuel. The gas from the cracking stills and the tars produced in refining processes should provide much of the fuel for cracking and fractionating the oil.

Shale oil refining begins with the retorting process. It is by no means impossible that modifications of retorting methods will yield crude shale oils more easily refined than oils produced by present known methods.

Future Supply

Most important of all, perhaps, is the status of the supply of liquid fuels and lubricants. The price that must be paid for them varies with that supply. As the supply of the present cheap and easily refined raw material (petroleum) decreases it will be possible to produce profitably the materials that are more costly and more difficult to refine. The present knowledge of shale oil indicates that it is a raw material supply for future years rather than the present and that the time of its commercial utilization is definitely related to the future of petroleum production and to the development of other substitutes for petroleum products.

Full details regarding this work are given in Bureau of Mines Bulletin 315, which is obtainable from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a price of 70 cents.

LA.-ARK. FIELDS

(Continued from Page 50)

Parish, came in from 2,572 feet making salt water.

Holly District

Proven area of the Holly district of DeSoto Parish passed from the picture temporarily when Arkansas Fuel Oil Co. completed No. 2 Scott, SW cor. SE NE, Section 32-14-13, pumping 50 bbls. of fluid of which half is oil from 2,790 feet. It is a mile northeast of the nearest producer and between the two is a dry hole drilled by Standard Oil Co. and a half mile east is the company's No. 1 Scott, also a failure. Consequently, whether the "extension" will be followed by drilling in intervening territory remains to be seen. Lacy Oil Co. abandoned No. 1 G. W. Sample in the NW NE, Section 1-13-14, 1½ miles west of the productive area confined to Section 5-13-13, when it tested dry at 2,925 feet. Frank Melat and associates' No. 1 Schryver, NW SW, Section 35-14-13, 2½ miles east of production, is coring again after bailing dry following a drill stem test at 2,782 feet that showed 50 feet of oil. Arkansas-Louisiana Pipe Line Co. has begun work on another well in the old Spider territory southwest of Mansfield where it has a small gas well. The new wildcat is No. 2 Johnson in Section 7-11-13, on the same lease on which it completed a 3,000,000-foot gas well several months ago.

Monroe-Richland

Only two completions were reported from the Monroe-Richland gas territory. Arkansas-Louisiana Pipe Line Co. completed No. 4 McEnery, Section 29-19-4, Ouachita Parish, gauging 4,820,000 feet at 890 pounds from 2,200 feet and Southern Carbon Co.'s No. 1 H. H. Hemler, Section 1-16-6, Richland Parish, gauged 40,320,000 feet at 720 pounds from 2,440 feet. Ruston Drilling Co.'s wildcat in Morehouse Parish, No. 1 Tucker & Platt, NE NE, Section 8-20-6, topped the Monroe second sand at 2,436 feet, tested dry at 2,440-52 feet, cored from 2,460-74 feet and is arranging to make another test. The other deep test in Monroe, J. W. Herkness' No. 12 Bowles, Section 18-20-5, is drilling at around 3,400 feet. Palmer Corp.'s No. 1 Brown, Section 27-16-6, Richland Parish, hit a fresh water flow at 513 feet. No. 1 Hill is a new location in Section 31-16-6, in the southwest corner of the field.

Zwolle Area

Teteco Oil Corp.'s No. 1 Louisiana Long Leaf Lumber Co. in Section 18-6-12, Sabine Parish, 8 miles south of Zwolle production, did the opposite from its gas show of last week and has been abandoned at 4,077 feet as a dry hole after 1,500 feet of drill stem was lost in the hole. San Miguel Oil Corp. abandoned location for No. 1 Blankenship in the SW SE, Section 20-9-11. Pelican Natural Gas Co., on the other hand, has made location for two more wildcats southeast of production. No. 3 Louisiana Long Leaf Lumber Co. is drilling at 675 feet in the SW SW, Section 4-7-11, and No. 3 Sabine Lumber Co. is a rig in the SE NW, Section 6-7-11. R. L. Gay's No. 8 Bowman-Hicks, Section 18-7-13, Blue Lake district of Zwolle, has 1,500 feet of oil in the hole from 2,494 feet and is arranging to deepen. Meanwhile it made a head of about 150 bbls. and will probably prove an extension of the Blue Lake stuff for approximately a mile east, with a dry hole between it and the nearest well but as a dry hole in Zwolle and Blue Lake both has not condemned surrounding acreage this one does not necessarily condemn this stretch of territory. Meanwhile Gay has made location for No. 5 Sabine Lumber Co. in the SE NE, Section 5-17-14, a half mile northwest of the group of producers that constitute the Blue Lake Pool. Magnolia Petroleum Co. completed a small well in the Sarepta district of Webster Parish, No. 1 Gardner in the SE NW, Section 1-23-11, pumping 5 bbls. from 2,727 feet along with 300 bbls. of water.

The same company's No. 1 Grayson, an old well drilled deeper in Section 21-15-19, Stephens district of Ouachita County, Arkansas, pumped 14 bbls. from 2,123 feet. On original completion in March this year it pumped 100 bbls. of oil and 225 bbls. of salt water from 1,480 feet. Marine Oil Co.'s No. 3-B Winn, Section 10-18-13, Urbana district of Union County, flowed 156 bbls. of oil and 1,000 bbls. of salt water from 3,559 feet.

GULF COAST FIELDS

(Continued from Page 48)

ever, did extend the 5,400-5,500-foot production slightly westward.

Testing of salt water in Houston Oil Co.'s No. 1 Rose Lambert, west offset to Union Producing Co.'s No. 1 M. F. Lambert, wildcat producer 2 miles northeast of the Refugio main field, proved disappointing to that area, although it is thought too much sand was taken in on the test. This hole set 21 feet of screen at 5,905 feet. The hole is being plugged back for a second test. As deep holes to the east and south of the Lambert producer have been drilled unsuccessfully, a complete failure in the Houston Oil Co.'s well leaves only one direction, north, in which the field can go. The 5,900-foot sand is one of three deep producing horizons found at Refugio but so far No. 1 M. F. Lambert has been the only commercial well in at that level. Salt water has been found in the horizon in other deep tests drilled over the Refugio area.

Houston Oil Co.'s No. 1 Straunch, a 5,500-foot sand well in the town lot district, which has defied all efforts since June 25 to be placed under control, continues a center of interest at Refugio. The well was shut in for a short time late in the week but as the foundations started to crumple it was opened again and allowed to blow wild. The well is believed to be increasing in volume of gas production and has been spraying some light gravity oil.

Danbury Dome

Shell Petroleum Corp. has abandoned its third test on the Danbury Dome in central Brazoria County. The hole went into the loose sandy shale showing salt water at 1,745 feet. Danbury so far has not been commercially productive although some oil was swabbed from the first test from a shallow sand at 1,567 feet. Another wildcat abandonment of interest is that of Watts Oil Co.'s No. 1 Titus, in the Wheelright Survey, southern Matagorda County, in what is known as the Mad Island area. Although a failure for production as low as 3,509 feet, at which depth it was abandoned, the test proved of considerable importance from a geological angle as it determined a pronounced high and indicated a very unusual geological condition existing in that area.

ELIGIBLE FOR INSURANCE

Announcement has been made that the Sinclair Consolidated Oil Corp. has extended free life insurance privileges to permanent employes of the Pierce Petroleum organization recently acquired. Each employe of six months standing will receive $1,000 life insurance at the expense of the Sinclair company, the insurance to take effect as of July 1. At a later date eligible employes will have an opportunity of taking out additional insurance at reduced rates and without medical examination under the regular provisions of the Sinclair group life insurance plan.

PIONEER CONTRACTOR DIES

Nick Horn, 61, pioneer oil well contractor of Nowata, Okla., died suddenly while fishing at Big Creek, 20 miles northeast of Nowata.

Natural Gasoline Manufacture

More Than 1,000 Plants According To Bureau Survey

By G. R. Hopkins and E. M. Seeley
Bureau of Mines

According to reports received by the Bureau of Mines, Department of Commerce, as of January 1, 1930, there were 1,035 natural gasoline plants in the United States, with a total daily capacity of 10,516,000 gallons. (These data do not include one small plant in Alaska.) The last similar survey, that of January 1, 1928, showed a total of 1,155 plants of 8,048,000 gallons daily capacity. Thus in two years' time the number of plants has decreased by 120, but the total capacity has increased 2,468,000 gallons, or 31 per cent. This is roughly equivalent to the gain in production over the same period.

Over half of the increase in total capacity was registered in California, where the development of flush oil production having a comparatively high gas oil ratio in such fields as Santa Fe Springs led to construction of some new plants and material enlargement of others.

Of the total plants, 999 were operating on January 1, 1930, and 36 were shut down. This compares with 1,060 operating and 95 shut down two years ago, which indicates a tendency to dismantle plants as soon as they become obsolete or unprofitable. The total daily capacity of the plants operating on January 1, 1930, amounted to 10,278,000 gallons, or 98 per cent of the total, leaving only 238,000 gallons, or 2 per cent, for the shutdown plants. This contrasts with the refining industry, which usually has 5 per cent of its total capacity idle; the difference is due to the relative ease with which a refiner can secure a crude supply as against the difficulty the natural gasoline manufacturer has in re-establishing his gas connections.

During 1929 the average total daily capacity of the operating plants was 9,899,000 gallons, while the average daily production amounted to 6,015,000 gallons. This indicates that the plants operated during 1929 at 61 per cent of their capacity.

Although over 60 plants were dismantled in Oklahoma during 1929, the State continued to rank first in total number. California was second in number of plants with 165, and was one of the few states that showed a gain since the 1928 census. California was the leading State in total daily capacity, with 3,658,000 gallons; Oklahoma was second with 3,085,000 gallons. The disparity between the average size of plants in various sections of the country was more pronounced than at any time since these surveys were begun. For example, the average size of the plants in Pennsylvania on January 1, 1930, was less than 1,000 gallons daily, but in California it was over 20,000 gallons.

The largest plant in the country is that of the General Petroleum Corp. of California at Santa Fe Springs; the largest plant east of California is that of the Sinclair Oil & Gas Co. at Seminole, Okla.

The absorption method of extracting natural gasoline made a further gain in relative importance during 1928 and 1929 at the expense of the compression and charcoal methods. The daily capacity of the plants using the absorption method increased from 5,476,000 gallons on January 1, 1928, to 7,956,000 gallons on January 1, 1930, at which date it comprised 76 per cent of the total. The charcoal method of producing natural gasoline, the most recent development in natural gasoline manufacturing equipment, declined in favor during 1928 and 1929 when the total number of plants fell from 27 to 23, and the total capacity from 214,000 gallons to 186,000 gallons.

LABORATORY ACCURACY REQUIRES CARE IN SELECTING INSTRUMENTS

By C. L. Huffman
Tagliabue Manufacturing Co.

From the manufacturers' viewpoint, there are four classes of instruments for the oil laboratory: thermometers, hydrometers, apparatus such as colorimeters, viscosimeters, and glassware such as beakers, test tubes, etc.

Thermometers and hydrometers are glass blown articles, while devices such as colorimeters, viscosimeters, etc., are basically of metal, although they may have wood and glass parts. Sulphur and water determination apparatus are essentially glass blown.

One distinction between thermometers, hydrometers and the other instruments, is that the former may be understood to have a certain definite accuracy, more or less independent of the conditions of use, while the latter are generally standardized by dimensions only. An exception to this is the Saybolt viscosimeter, the tube of which may be obtained with a certificate expressing accuracy.

Temperature and gravity play such an important part in the every day work of the oil chemist, that the accuracy of the two instruments used for the determination of these properties is of the utmost importance. The oil chemist of today is fortunate to have at his command, definite specifications for both thermometers and hydrometers. The American Society for Testing Materials began nearly 10 years ago a thorough investigation of the thermometers used in all of the standard tests, such as viscosimeters, distillations, flash points, etc. Today there is a standard thermometer for almost every purpose.

More recently, certain general specifications for hydrometers have been published, but no attempt has been made to limit every dimension as has been done with thermometers. Briefly, the A.S.T.M. recognizes a plain hydrometer for referee test, but approves a combined hydrometer for general routine work. The standard hydrometer for referee work should be graduated in 0.1 A.P.I. and 2° F. if the hydrometer is combined with thermometer. The graduation intervals of hydrometer should be not less than 1 mm in width. A hydrometer thus graduated should be accurate to + 0.1° A.P.I. and to + 1° F. temperature.

Given such elaborate specifications for instruments, the operator may ask, how do I know whether these instruments come within the accuracy requirements or not? Dimensional specifications can be checked by gauges and rules which are in themselves sufficiently correct for all practical purposes. Thermometers and hydrometers, on the other hand, require not only standards, but satisfactorily built comparison baths, the temperature of which can be controlled.

Meaning of Accuracy

Before describing briefly some methods of test, a word might be said in regard to the meaning of the term accuracy. In the first place absolute accuracy, that is, no error whatsoever is an ideal which cannot be achieved in practice. It is for this reason that we always write in an accuracy tolerance in our specifications. This tolerance is assumed to be small enough so that final results of the test will not appreciably be affected even though the maximum error is present.

If, however, the magnitude of the error is of interest, then actual corrections must be obtained. There are three ways to secure tables of corrections for thermometers or hydrometers.

First. A United States Bureau of Standard certificate may be obtained.

Second. A so-called factory certificate may be secured from reputable manufacturers.

Third. The laboratory may be in position to certify its own instruments and assign corrections to a particular thermometer or hydrometer.

The first two methods save work and worry. However, you may not wish to wait perhaps six months for the Bureau of Standards to issue a certificate, and you may not put complete reliance in a manufacturer's certificate, so you establish your own testing laboratory.

Now, reputable manufacturers welcome inspection of their products; it keeps them on their toes; but unfortunately, a little knowledge of testing is sometimes a dangerous thing, and erroneous deductions

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CALIFORNIA NATURAL GAS BUILDS BUTANE PLANTS

The California Natural Gas Corp., a subsidiary of the Pacific Public Service Co. of California, has announced plans for the installation of butane gas plants in several communities in Oregon and Washington. The company over the past year has been active in this new field of gas fuel outlets in California and now plans to extend its activities to other states.

By the end of the year, the company plans to spend approximately $1,000,000 for construction of gas plants. Expenditures totaling $218,000 will be made during the next 60 days, when construction is begun in various communities in northern California where certificates of public convenience and necessity have already been authorized by the State Railroad Commission. These include Vacaville, Rio Vista, Suisun, Fairfield and Isleton.

In Brawley and Calexico, distribution systems are practically completed. Installation of storage tanks and plant equipment for mixing the liquefied natural gas is going forward so that gas service will be available by September 1. The total cost of all construction in these two communities will approximate $337,000.

When Brawley was selected as one of the California towns to be supplied with liquefied natural gas, the company's survey indicated that consumers would number 600 at the end of the first year of operation. This estimate has been exceeded by more than 100 per cent, as the actual number of residents who have signed application blanks for gas service was 1,375 up to and including July 1. In Calexico, the solicitation of consumers was not started as early as in Brawley. It was estimated that the first year would bring 600 consumers, but the July 1 report shows that 580 already have signed up for service.

Construction work in more than 20 other small California communities, for which applications now are pending before the railroad commission, will begin after the necessary certificates have been granted.

While actual construction work has not yet been started by the Oregon and Washington subsidiaries of Pacific Public Service, it is the intention to serve 10 communities in each of the northern states.

START CONSTRUCTION

The Phillips Petroleum Co. has started construction of its new natural gasoline plant in the Hobbs area of New Mexico. It will be the second plant of the Phillips company in New Mexico, its first plant built several years ago being located in Eddy County of the Artesia Field.

The Hobbs plant will consist of two units and will have sufficient capacity to handle 40,000,000 feet of gas daily. It will cost approximately $750,000. It is located in the northwest quarter of Section 4-19-38.

One unit of the plant will be designed to operate with well pressure. The other will operate with the necessary compressors to handle the gas. The plant site is 3 miles west of Hobbs, a short distance from the Texas-New Mexico railroad.

NEW PLANT FOR PURE

The Pure Oil Co. has started the construction of a natural gasoline plant on the Peter's lease in Section 3, Nacogdoches County School Land Surveys of Texas. The plant will be of the oil absorption type and will have a capacity of 5,000,000 feet of gas daily.

Construction and Operation

RESEARCH DEPARTMENT*

In the manufacture of a product for which there is a wide demand, and of which there is a limited supply, the manufacturer need only study production problems. Of late years there has been an increasingly serious problem of overproduction of natural gasoline. The manager of the department, therefore, has found it necessary not only to study processes and production to effect economies, but to study the possibilities of new products and new uses for present products. With prices periodically below the cost of production, it is quite obvious that part of the production at least must be diverted to channels other than motor fuel blends if the business is again to get upon a profitable basis.

It is not possible, nor is it desirable, to hire a number of chemists and chemical engineers, and tell them to "go ahead." Some outline must be made as a guide. There is, for instance, a definite field for solvents in the rubber and in the paint and lacquer industries. There is an opening for the substitution of products in the chemical field.

The gasoline organizations are giving a great deal of attention at present to the reforming of the lighter fractions of natural gasoline. Benzol is the chief product at the "end of the rainbow." It is the solution of this problem that holds out great promise to the gasoline manufacturer. This one investigation can easily use up the whole appropriation for research.

It is the superintendent's job to see to it that the research work is equally distributed and that the program is not "top-heavy." A great deal of the work of the laboratory is practical, but a limited part of the expense may well be charged to subjective studies. The applied research justifies the existence of the research division by the help it renders the superintendent, and the more or less pure research represents a possible extra profit through new discoveries.

*Twentieth of a series of articles explaining the inner workings of a natural gasoline organization. The series was prepared by an operator actively engaged in all phases of construction and operation.

Brief Items for Petroleum Refiners

Hydrogenation Will Assure Consumer of Adequate Supplies

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 19.—According to a statement made public today by A. C. Fieldner of the Bureau of Mines, Department of Commerce, the association of the Standard Oil Co. of New Jersey with 16 other companies for the control of the hydrogenation process for the conversion of crude oil into gasoline was termed as a "move for the future."

The organization of the Hydro Patents Co. to take over the patent rights to the process in United States from the Standard—I. G. Co. and the I. G. Farenindustrie Aktiengesellschaft of Germany was announced last week. The 17 companies affiliated with the new company represent approximately 80 per cent of the refining capacity in the United States.

It was pointed out that the process is unnecessary at the present time, due to the fact that there is an ample supply of gasoline to take care of needs. "The chief importance of this move," Mr. Fieldner states, "is in the fuel conservation program, in that it permits the conversion of practically all crude oil into gasoline, its most valuable by-product, and leaves the field of heavy fuel to coal, to which it rightfully belongs."

The process, although known for some time, having been first developed in a laboratory in Germany by Friederich

(Continued on Page 146)

BARNSDALL BUYS CONTROL MONAMOTOR OIL COMPANY

NEW YORK, July 21.—The Barnsdall Corp. has purchased the business of the Monamotor Oil Co., one of the largest independent distributors of gasoline and lubricating oils west of Chicago, E. B. Reeser, president of Barnsdall, announces here.

The acquisition, he said, links Barnsdall's marketing system in South Dakota and other northwestern territory with its Oklahoma and Kansas system of bulk and retail stations, the Monamotor company filling the gap between northern Missouri and South Dakota, and giving Barnsdall continuous distribution from the Texas line on to the south to St. Paul and Minneapolis on the north. To the east, the company's marketing system extends beyond Detroit.

Monamotor Oil Co. is credited with annual gasoline sales of 12,000,000 gallons. Hitherto the company has been purchasing its gasoline requirements in the open market. Barnsdall's gasoline sales are running at the rate of 36,000,000 gallons per annum, and the Monamotor acquisition will increase this volume to close to 50,000,000 gallons, in addition to giving Barnsdall materially widened outlets for its lub oil output.

REFINERY AT THRALL

Roy Westbrook and associates of Fort Worth have announced plans for the construction of a skimming plant near Thrall in Williamson County, Texas. The plant will have a capacity of 3,000 bbls. daily.

Crude oil for the plant will be supplied by the Williamson County Pipe Line Co., which has a 4-inch line connecting the Chapman Pool to Thrall. Approximately 10 per cent gasoline and 10 per cent kerosene will be secured in a skimming operation with the Chapman crude oil. The remaining products will be gas oil and fuel oil. The Missouri Pacific railroad is said to have contracted for 1,200 bbls. of fuel oil daily. The owners expect to have a plant in operation by September..

EXPECT SEVERAL MAJOR REFINERS WILL USE GREAT LAKES PIPE LINE

Several other refining organizations with plants in Oklahoma and Kansas in addition to the Barnsdall and Continental companies will use the new gasoline pipe line to be built connecting the Mid-Continent with the Middle West according to reports in trade circles during the past week.

The line as announced last week (The Oil and Gas Journal, July 17, page 35) will be built by the Great Lakes Pipe Line Co., a new company organized by the Continental Oil Co. and the Barnsdall Oil Corp. The company has an initial capitalization of 40,000 shares of which 24,000 are owned by the Continental and the remainder by the Barnsdall corporation.

Although primarily built to transport gasoline from the Oklahoma refineries of the Continental and Barnsdall companies it is now understood that tentative arrangements have been made to transport gasoline from other plants in both Oklahoma and Kansas. The companies prominently mentioned in this connection are the Mid-Continent Petroleum Corp., Independent Oil & Gas Co., Deep Rock Oil Corp. (Shaffer), and the Skelly Oil Co.

All four companies are large independent refiners. The Mid-Continent has the largest refinery in the Mid-Continent Field at West Tulsa. The Independent has refineries both at Okmulgee and Kansas City, two points which will be touched directly as shown in the accompanying map. The Deep Rock corpora-

(Continued on Page 146)

Map showing gasoline pipe line to be built by Great Lakes Pipe Line Co.

NEW REFINERY PROJECT

CHATHAM, Ontario, July 19.—John Irwin, president of the McColl-Frontenac Oil Co. of Montreal and Toronto, now visiting western Canada, has announced that his company is considering the establishment of a new refining plant in the Canadian West, to cater to the demand from the prairie provinces and British Columbia. Winnipeg, Regina, Saskatoon, Calgary, Edmonton and Vancouver are possible sites, the ultimate location being determined by proximity to markets, power facilities, water services and availability of labor and fire protection. An outlay of $1,500,000 is involved in the project.

The company is established in eastern Canada, following the amalgamation a few years ago of the McColl Brothers and Frontenac Oil Co. enterprises. Last winter the company increased the capacity of the Toronto and Montreal refineries by 1,500 bbls. each. The company also added two tank steamers, giving a fleet of three on the Great Lakes and two on the ocean.

ORGANIZE REFINING COMPANY

Morgan May, formerly of El Dorado, Ark., now of Hobbs, N. Mex.; Bob Childers of the Southwestern Investment Co. and C. L. Wendt of Colorado, are forming the Hobbs Oil & Refining Co., and plan on constructing a 2,000-bbl. per day refinery to handle Hobbs Field crude oil. Capital stock is to be $100,000. Output of the plant is hoped to be sold in the Hobbs area.

NORTHLAND BUYS PIPE LINE

CHICAGO, July 22.—The Northland Oil Co. of this city has purchased the Simrall Pipe Line Co., according to an announcement by C. L. Maguire, president. The pipe line company operates a gathering system in the Mount Pleasant Field of Michigan supplying crude oil to the refinery of the Roosevelt Oil Co.

The Northland company will continue to deliver crude oil to the refinery and will also have charge of all sales for the Roosevelt company.

MARY TO BIG SPRING COSDEN CO. REFINERY

E. J. Mary, who has been superintendent of the Chalmette Petroleum Corp.'s refinery at Chalmette, La., has resigned and accepted a similar position with the Cosden Oil Co. Mr. Mary has charge of

E. J. Mary

operations at the Big Spring, Tex., refinery of the Cosden company.

The refinery at Big Spring has a rated crude oil capacity of 12,000 bbls. daily. Improvements are now under way which will increase the capacity to around 16,000 bbls. daily.

Mr. Mary has been connected with Mid-Continent refinery operations as a superintendent for several years. Before going with the Chalmette he was superintendent of the Shreveport, La., refinery of the Shreveport-El Dorado Pipe Line Co.

WAVERLY OIL WORKS ACQUIRED BY STANDARD

The taking over of stations and dealer accounts of the Waverly Oil Works Co. in Pittsburgh and surrounding territory by the Standard Oil Co. of Pennsylvania was completed last week. The Standard company is a subsidiary of the Standard Oil Co. of New Jersey and the Waverly company is one of the oldest independent refining and marketing organizations in Pennsylvania.

The properties involved include 35 service stations and over 400 dealer accounts. With the addition of the Waverly stations and the units under construction, the Standard company expects to have approximately 100 service stations in the Pittsburgh area by the end of the year.

The Standard of Pennsylvania became active in Pennsylvania last year. A number of stations have been built or purchased in other parts of the State. The gasoline is supplied by pipe line from the Bayway, N. J., refinery of the parent company. The latter, early this year, converted the crude oil pipe line of the Tuscarora Pipe Line Co. extending from the refinery to Midland, Pa., near Pittsburgh, to a gasoline line. A large bulk station was recently constructed at Pittsburgh.

The purchase does not involve the Pittsburgh and Coraopolis refineries of the Waverly company, which will continue to refine Waverly products, specializing in motor oils for which a nation-wide demand has been developed.

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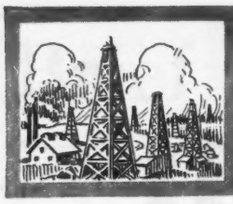


REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	July 22		July 15		July 8	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.06	.06¼	.05¾	.06¼	.05¾	.06¼
56-58 450 endpoint	.05¾	.06¼	.05¾	.06¼	.05¾	.06¼
*58-60 437 endpoint (U. S. Motor)	.065		.066		.06676	
*60-62 437 endpoint	†.06	.06½	†.06	.06½	†.06¼	.06¾
*60-62 400 endpoint	†.06⅝	.06½	†.06¼	.06½	.0725	
*64-66 375 endpoint	†.06⅝	.06¾	†.06½	.06¾	.0775	
68-70 360 endpoint	.07	.07½	.07	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.05½	.06	.05½	.06	.05¾	.06¼
NORTH TEXAS—						
50-52 450 endpoint	.05¾	.06¼	.05¾	.06¼	.05¾	.06¼
58-60 450 endpoint	.05¾	.06	.05¾	.06	.05¾	.06
58-60 437 endpoint (U. S. Motor)	.05¾	.06¼	.05¾	.06¼	.05¾	.06¼
60-62 400 endpoint	.06	.06¼	.06	.06¼	.06⅛	.06½
64-66 390 endpoint	.06¼	.06½	.06¼	.06½	.06⅜	.06¾
64-66 375 endpoint	.06½	.06¾	.06½	.06¾	.06½	.07
68-70 360 endpoint	.06⅞	.07	.06¾	.07	.07	.07½
64-66 437 endpoint (blend)	.05½	.06	.05½	.06	.05¾	.06¼
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.06¾	.07	.07	
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.06¾	.07	.07	
PENNSYLVANIA—						
52-54 Naphtha	.07	.07¼	.07¼		.07¼	
54-56 Naphtha	.07¼	.07½	.07½		.07½	.07¾
58-60 Gasoline	.07¾	.08	.07¾	.08	.08	.08¼
60 Gasoline	.08	.08¼	.08	.08¼	.08	.08½
62 Gasoline	.08¼	.08½	.08¼	.08½	.08¼	.08½
64 Gasoline	.08½	.08¾	.08½	.08¾	.08½	.08¾
68-70 350 endpoint gasoline	.08¾	.09	.08¾	.09	.08¾	.09
CALIFORNIA—						
†58-60 437 endpoint (U. S. Motor) domestic	.09½	.10	.07	.07½	.05½	.06½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.05¾	.06¼	.05¾	.06¼	.05¾	.06
56-58 450 endpoint	.05¾	.06	.05¾	.06	.06	.06¼
58-60 437 endpoint (U. S. Motor)	.05⅞	.06½	.06	.06½	.06⅛	.06½
60-62 400 endpoint	.06⅛	.06⅜	.06¼	.06½	.06¼	.06½
64-66 375 endpoint	.06¾	.07	.07	.07¼	.07	.07¼
68-70 360 endpoint	.07⅛	.07⅜	.07¼	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.05¾	.06	.06	.06¼	.06¼	.06½
GULF COAST (Export)—						
58-60 U. S. Motor	.08		.08		.08	
60-62 400 endpoint	.09		.09		.09	
61-63 390 endpoint	.09¼		.09¼		.09¼	
64-66 375 endpoint	.09½		.09½		.09½	

*Weighted average prices July 21, 14 and 7 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	July 22		July 15		July 8	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04½	.04⅝	.04¼		.04¼	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04		.04¼	.04½
Grade B, 76.83.9, 375 e.p., rec. 85%	.04¼		.04		.04¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼		.03¾	.04	.04	.04¼
Grade C, 80-92, 375 e.p., rec. 78%	.04¼		.03¾		.04	.04¼
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04½	.04⅝	.04¼		.04½	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04		.04¼	.04½
Grade B, 76.83.9, 375 e.p., rec. 85%	.04¼		.04		.04¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼		.03¾	.04	.04	.04¼
Grade C, 80-92, 375 e.p., rec. 78%	.04¼		.03¾		.04	.04¼
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04¾	.05	.04½	.04¾	.04¾	.05
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼	.04½	.04¼	.04½	.04½	.04¾
Grade C, 80-92, 375 e.p., rec. 78%	.04	.04¼	.04	.04¼	.04½	
CALIFORNIA—						
75-78, 375-390 endpoint	.06½	.06¾	.06¼	.06¾	.06¼	.06¾
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04½		.04¼		.04¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¼		.04		.04¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.03¾		.04¼	

BURNING OIL

	July 22		July 15		July 8	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
42-44 water white kerosene	.03½	.04	.03½	.04	.03½	.04
NORTH TEXAS—						
41-43 water white kerosene	.03⅛	.03¼	.03⅛	.03¼	.03¼	.03½
40-41 water white kerosene	.03	.03⅛	.03	.03⅛	.03	.03¼
***NORTH LOUISIANA—**						
41-43 water white kerosene	.04	.04¼	.04	.04¼	.04¼	
***ARKANSAS—**						
41-43 water white kerosene	.04¼		.04	.04¼	.04¼	
PENNSYLVANIA—						
43 Kerosene prime white	.04¼		.04¼		.04¼	
45 Kerosene water white	.04½	.04⅝	.04⅝		.04⅝	.04¾
46 Kerosene water white	.04¾	.05	.04¾	.05	.04¾	.05¼
300 Mineral Seal	.05¾	.06	.05¾	.06	.05¾	.06
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.04½	.04	.04½	.04	.04½
Engine distillate, 43-44, 445 endpoint	.07	.07½	.06	.06½	.06	.06½
Engine distillate, 42-44, 480 endpoint	.06	.06½	.05	.05½	.05	.05½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03¼	.03½	.03¼	.03½	.03¼	.03½
42-44 water white kerosene	.03½	.03¾	.03½	.03¾	.03½	.03¾
GULF COAST (Export)—						
41-43 prime white	.06		.06		.06	
41-43 water white	.07		.07		.07	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	July 22		July 15		July 8	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.45	.50	.45	.50	.47½	.52½
18-22 Fuel Oil, per bbl.	.47½	.50	.47½	.50	.50	.55
20-22 Fuel Oil, per bbl.	.50	.57½	.50	.57½	.52½	.60
22-26 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.65
24-26 Fuel Oil, per bbl.	.60	.65	.60	.70	.60	.70
26-30 Fuel Oil, per bbl.	.70	.75	.70	.75	.75	.80
28-30 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color)	.02¼	.02½	.02¼	.02½	.02¼	.02½
36-38 Distillate	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
32-36 Gas Oil (industrial)	.02	.02⅛	.02	.02⅛	.02	.02⅛
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.75	.80	.75	.80	.70	.75
30-32 Gas Oil	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.02¾
***ARKANSAS—**						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02⅜	.02½	.02⅜	.02½	.02⅝	.02¾
16-22 Refinery Fuel Oil, per bbl.	.60	.70	.60	.70	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.75	.80	.75	.80	.80	.90
Bunker C Fuel (small lots)	1.05	1.10	1.05	1.10	1.05	1.10
PENNSYLVANIA—						
30-34 Fuel Oil	.03⅛	.03¼	.03⅛	.03¼	.03¼	.03½
36-40 Fuel Oil	.03¼	.03½	.03¼	.03½	.03½	.03¾
CALIFORNIA—						
33-36 Distillate	.02½	.03	.02½	.03	.02½	.03
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-20 Fuel Oil, Bunker (at tidewater)	.65	.75	.60	.65	.60	.65
15-20 Fuel Oil (cargo lots), per bbl.	.60	.70	.55	.65	.55	.65
27 plus Diesel, per bbl.	.80	.90	.80	.90	.80	.90
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.57½	.62½	.57½	.65	.60	.65
18-22 Fuel Oil, per bbl.	.47½	.52½	.45	.50	.50	.55
28-30 Fuel Oil, per bbl. (zero)	.77½	.82½	.77½	.82½	.82½	.87½
32-36 Gas Oil (zero)	.02⅜	.02½	.02⅜	.02⅝	.02⅜	.02⅝
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02	.02⅛	.02¼	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

	July 22		July 15		July 8	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05½	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.08	.08½	.08	.08½	.08	.08½
150 vis., 4 color, 20-25 cold test	.07½	.08	.07½	.08	.07½	.08
180 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 5 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
200 vis., 3 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 4 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis., 5 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.08	.11	.08	.11	.08	.11
600, steam refined, dark green	.06	.08	.06	.08	.06	.08
190-200 vis., D color, Bright Stock	.33		.37		.37	
150-160 vis., D color, Bright Stock	.28	.32	.30	.32	.30	.32
*150-160 vis., D color, Bright Stock	.26	.28	.28	.30	.28	.30
150-160 vis., E color, Bright Stock	.24	.26	.26	.28	.26	.28
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛

*High cold test. All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05¾	.06½	.05¾	.06½	.05¾	.06½
34 Sundebloom	.05¾	.06	.05¾	.06	.05¾	.06
36 Miners' Neutral	.05¾	.06	.06	.06¼	.06	.06¼
150, 3 color	.12½	.14	.13	.14	.13	.14
180, 3 color	.16	.18	.17	.18	.17	.18
200, 3 color	.19	.21	.20	.23	.20	.23
220, 3 color	.23	.23½	.23	.24	.23	.24
600, steam refined	.10½	.11	.10	.11	.10	.11
635, steam refined	.14	.17	.14	.17	.14	.17
650, steam refined	.15½	.19	.17	.19	.17	.19
600, Pennsylvania Flash	.20	.21	.21		.21	
630, Pennsylvania Flash	.28	.29	.28	.29	.28	.29
600, E filtered	.16½	.18	.17½	.18	.17½	.18
600, D filtered	.20	.22	.20	.23	.20	.23
Pennsylvania Bright Stocks	.24	.25	.25	.27	.25	.27
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
200 vis., 3 color, pale oil	.09½		.09½		.09½	
300 vis., 3 color, pale oil	.10¾		.10¾		.10¾	
500 vis., 3½ color, pale oil	.12	.12¾	.12	.12¾	.12	.12¾
750 vis., 3½ color, pale oil	.13½		.13½		.13½	
1,200 vis., 3½ color, pale oil	.16		.16		.16	
2,000 vis., 6 plus color, red oil	.17		.17		.17	

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

200 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09
300 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼
500 vis., 5-6 color, red oil	.11¼		.11¼		.11¼	
750 vis., 5-6 color, red oil	.12¾	.13	.12¾	.13	.12¾	.13
1,200 vis., 5-6 color, red oil	.15		.15		.15	
2,000 vis., 4 color, pale oil	.17		.17		.17	
200 vis., 2½ color, filtered oil	.11	.12	.11	.12	.11	.12
300 vis., 2½ color, filtered oil	.12	.13	.12	.13	.12	.13
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.15¼	.15½	.15¼	.15½	.15¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	July 22		July 15		July 8	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.08	.10	.08½	.10	.09	.10
Kerosene, water white, 41-43	.07	.07½	.07	.07¼	.07	.07¼
*Fuel Oil, Bunker "C," 41-43	1.15		1.15		1.15	
Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02¾		.02⅞	
125-127 a.m.p., per lb.	.03¼		.03⅛		.03¼	
130-132 a.m.p., per lb.	.03½		.03½		.03¾	
133-135 a.m.p., per lb.	.04½		.04⅜		.04½	
135-137 a.m.p., per lb.	.04⅝		.04⅝		.04⅝	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06½	
Lily White	.06¼		.06¼		.06¼	
Snow White	.08		.08		.08⅛	

*Lighterage 5.0 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	July 22		July 15		July 8	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.18	.19	.18	.19	.21	
635, steam refined	.20	.21	.20	.21	.23	
650, steam refined	.24	.25	.24	.25	.27	
600, Pennsylvania Flash	.29		.30		.33	
630, Pennsylvania Flash	.32		.33		.36	
600, Warren E	.26		.28		.31	
600, Oil City E	.25		.27		.30	
Light 140-150 Bright Stocks	.32		.33		.35	
Dark 140-150 Bright Stocks	.30		.31		.33	

LOS ANGELES EXPORT PRICES

	July 22		July 15		July 8	
Kerosene, water white	.03¾	.04½	.03¾	.04½	.03¾	.04½
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.06¾	.06½	.06¾	.06½	.06¾

*Prices on coastwise shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posted all oil 40 gravity and above at $1.43 on April 10.

Corsicana heavy (April 10, 1930).....$ .80

Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

In Noel-McConnell district Prairie Oil & Gas Co. posted April 10, below 30 degrees, 75½ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

WEST TEXAS

Iatan*.....Same as North Texas

Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Ector .....See gravity table, Column 3

Howard and Glasscock.....See gravity table, Column 9

Chalk† (April 10, 1930) .....$ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (April 11, 1930) .....$ .90

Smackover, 24 gravity and above (April 11, 1930) 1.05

Carterville, Sarepta and Cotton Valley, below 36 gravity (April 11, 1930)... .85

Bellevue (April 11, 1930) 1.15

Urania (April 11, 1930) ..... .95

East El Dorado (April 11, 1930) ..... .90

Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

GULF COAST

Grade A (April 10, 1930)* $1.15

Grade B, 25 degrees and upward .....See gravity table

Jennings, La. (April 10, 1930)†..... 1.10

Refugio (light) .....Same as Grade B

Refugio (heavy) (April 10, 1930)‖ .... .85

Sorrento (April 10, 1930)‡ 1.10

Markham (April 10, 1930)‖..... .85

High Island (April 10, 1930)‖..... .95

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. ‖The Texas Pipe Line Co. ¶Posted by Gulf Pipe Line Co. ‖Humble Oil & Refining Co. and Gulf Coast Pipe Line Co.

(Continued on Page 142)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Okla.-Kans.	2 N. C. Texas, No. La., Arkansas	3 Crane, Upton, Ector, Crockett, Winkler, Pecos, Mitchell (West Texas) Lea, N. Mex.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Howard-Glasscock (West Texas)	10 Grade B Gulf Coast and Refugio Texas
Below 25	.75	.73	.65	....	....	....	....	....	.65	1.00
25 to 25.9	.80	.77	.68	....	....	....	....	....	.68	1.03
26 to 26.9	.85	.82	.71	....	....	....	....	....	.71	1.06
27 to 27.9	.90	.87	.74	....	....	....	....	.76	.74	1.09
28 to 28.9	.95	.92	.77	....	.75½	....	....	.81	.76	1.12
29 to 29.9	1.00	.97	.80	.75½	.80½	....	1.00	.86	.78	1.15
30 to 30.9	1.05	1.02	.83	.80½	.85½	....	1.05	.91	.80	1.18
31 to 31.9	1.10	1.07	.86	.85½	.90½	.77½	1.10	.96	.82	1.21
32 to 32.9	1.15	1.12	.89	.90½	.95½	.82½	1.15	1.01	.84	1.24
33 to 33.9	1.18½	1.17	.92	.95½	1.00½	.87½	1.18½	....	.86	1.27
34 to 34.9	1.22	1.22	.95	1.00½	1.05½	.92½	1.22	....	.88	1.30
35 to 35.9	1.25½	1.25½	.98	1.04	....	.96	1.25½	....	.90	1.33
36 to 36.9	1.29	1.29	1.01	1.07½	1.12½	.99½	1.29	....	.92	1.36
37 to 37.9	1.32½	1.32½	....	1.11	1.16	1.03	1.32½	....	....	1.39
38 to 38.9	1.36	1.36	....	1.14½	1.19½	1.06½	....	....	....	1.42
39 to 39.9	1.39½	1.39½	....	1.18	1.22	1.10	....	....	....	1.44
40 to 40.9	1.43	1.43	....	1.21½	1.26½	1.13½	....	....	....	1.46
41 to 41.9	1.46½	1.46½	....	1.25	1.30	1.17	....	....	....	1.48
42 to 42.9	1.50	1.50	....	1.28½	1.33½	1.20½	....	....	....	1.50
43 to 43.9	1.53½	1.53½	....	1.32	1.37	1.24	....	....	....	1.53
44 and above	1.57	1.57	....	1.35½	1.40½	1.27½	....	....	....	1.54

Column 1, Note—Above prices posted April 10, 1930, by Carter Oil Co. (beginning at 25 degrees and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24 degrees and below, the Magnolia Petroleum alone excepted. The Magnolia on April 10 posted the following prices: Below 26 gravity, 70 cents 26-26.9, 76 cents; 27-27.9, 82 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31 up and including 44 degrees and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

Column 2—Humble Oil & Refining Co. posted above prices April 10, 1930, and was followed by all other companies in Texas except Magnolia which posted a different price schedule than Humble up to 33.9 degrees (see note in paragraph just above). The Texas Company posted North Louisiana and Arkansas on April 10, and Standard of Louisiana posted on April 11 followed by other companies, but Magnolia's price schedule begins with below 28 gravity at 87 cents. North Central Texas includes North Texas, Ranger, Mexia Powell, Richland, Wortham, Lytton Springs, Currie, Nocona, Moran, and Corsicana light. Arkansas and Louisiana pools include Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. April 10, 1930, and Magnolia Petroleum Co. April 10, 1930.

Column 4, 5 and 6—Humble Oil & Refining Co., Prairie Oil & Gas Co., Magnolia Petroleum Co., April 10, 1930.

Column 7—Mid-West Refining Co., April 11. All crude over 37 gravity $1.32½.

Column 8—Louisiana Oil & Refining Co., April 11.

Column 10—Humble Oil & Refining Co., April 10. Magnolia Petroleum Co. posted below 25 gravity 65 cents with 3-cent differential upward to and including 36 and above which was posted at $1.01.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective March 11, 1930)

Gravity—	1 Seal Beach, Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Huntington Beach, Signal Hill, Inglewood	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs (June 14, 1930)	6 Santa Maria Coalinga	7 Wheeler Ridge Fruitvale	8 Orcutt, Ventura, Rincon	9 Ventura Avenue (Nov. 8)	10 Elwood Terrace	11 Athens, Rosecrans Dominguez
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.93	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	....	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.14	....	1.09	1.11	1.07	1.07	1.07	1.10	1.07	....	1.14
25 to 25.9	1.21	....	1.16	1.17	1.13	1.12	1.12	1.18	1.14	....	1.19
26 to 26.9	1.28	....	1.23	1.23	1.19	1.17	1.17	1.26	1.21	....	1.24
27 to 27.9	1.35	....	1.30	1.29	1.25	1.23	1.22	....	1.28	....	1.29
28 to 28.9	1.42	....	1.35	1.35	1.31	1.27	....	....	1.35	....	1.34
29 to 29.9	1.46	....	1.41	1.38	1.37	1.31	....	....	1.39	....	1.39
30 to 30.9	1.50	....	1.47	1.41	1.43	1.35	....	....	1.42	....	1.43
31 to 31.9	1.55	....	1.53	....	1.49	1.39	....	....	1.48	....	1.51
32 to 32.9	1.60	....	1.59	....	1.55	1.43	....	....	1.53	....	1.57
33 to 33.9	1.65	....	1.65	....	1.60	1.47	....	....	1.59	....	1.64
34 to 34.9	1.70	....	....	....	1.65	1.51	....	....	1.65	1.32	1.71
35 to 35.9	1.75	....	....	....	1.70	1.55	....	....	1.71	1.39	1.78
36 to 36.9	1.80	....	....	....	1.75	....	....	....	....	1.46	1.84
37 to 37.9	1.85	....	....	....	1.80	....	....	....	....	1.53	1.90
38 to 38.9	1.90	....	....	....	1.85	....	....	....	....	1.60	1.96
39 to 39.9	....	....	....	....	1.90	....	....	....	....	1.66	2.02
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	2.08
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.14
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.20

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11, the Union Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents.

Column 1——Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 22.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

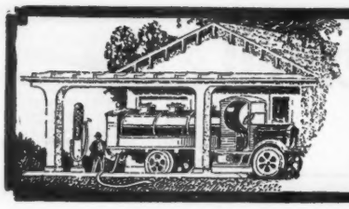
Column 5—Price change posted by Standard of California June 14.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Column 10—Standard posted price f.o.b. tanker.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns July 22.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago†	18.0	19.0	3.0	13.0
Decatur, Ill.	18.2	19.2	3.0	13.1
E. St. Louis	17.4	18.4	3.0	12.2
Joliet	18.4	19.4	3.0	13.3
Peoria	18.2	19.2	3.0	13.1
Quincy	18.2	19.2	3.0	12.9
Davenport, Ia.	18.5	19.5	3.0	13.3
Des Moines	18.5	19.5	3.0	13.3
Keokuk	18.5	19.5	3.0	13.3
Sioux City	18.1	19.1	3.0	12.9
Duluth, Minn.	19.5	20.5	3.0	13.9
Mankato	19.1	20.1	3.0	13.7
Minneapolis	19.2	20.2	3.0	13.9
LaCrosse, Wis.	18.2	19.2	3.0	14.0
Milwaukee	17.1	18.1	2.0	12.9
Madison	17.3	18.3	2.0	13.1
Detroit, Mich.	18.8	19.8	3.0	14.7
Grand Rapids	18.7	19.7	3.0	14.6
Saginaw	18.9	19.9	3.0	14.8
Evansville, Ind.	19.0	20.0	4.0	14.0
Fort Wayne	19.4	20.4	4.0	14.4
Indianapolis	19.2	20.2	4.0	14.2
South Bend	19.4	20.4	4.0	14.4
Fargo, N. D.	20.9	21.9	3.0	15.9
Huron, S. D.	20.3	21.3	4.0	14.7
Sioux Falls	19.1	20.1	4.0	14.4
K. C., Mo.*	17.9	18.9	3.0	11.6
Springfield*	17.8	18.8	3.0	13.5
St. Louis*	16.9	17.9	2.5	12.3
St. Joseph	17.5	18.6	2.0	12.2
Wichita, Kans.	16.8	15.8	3.0	11.8
Bartlesville, Ok.	17.5	20.5	4.0	11.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 3½ cents; more than 6,000 gallons, 5 cents; 15,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	10.0
V. M. & P. naphtha	16.7	12.0
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	18.0	4.0	12.0
Fort Worth	14.0	17.0	4.0	11.0
Houston	15.0	19.0	4.0	11.0
San Antonio	14.0	18.0	4.0	11.0
El Paso	16.0	20.0	4.0	13.0
Texarkana	14.0	15.0	4.0	12.0
Muskogee*	16.0	19.0	4.0	9.0
Okla. City*	15.0	18.0	4.0	10.0
Tulsa*	16.0	20.0	4.0	10.0
Ft. Smith, Ark.	17.0	18.0	5.0	13.0
Little Rock	18.0	19.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	16.0	19.0	4.0	15.5
Pueblo	17.0	20.0	4.0	15.5
Grand Junction	21.5	24.5	4.0	19.0
Casper, Wyo.	19.0	22.0	4.0	14.0
Cheyenne	20.5	23.5	4.0	15.5
Butte, Mont.	24.5	28.0	5.0	20.0
Billings, Mont.	24.5	27.5	5.0	18.5
GreatFalls, Mont.	24.5	27.5	5.0	20.0
Helena	24.5	27.5	5.0	20.0
Salt Lake, Utah	20.0	23.0	3.5	17.0
Aubu'que, N. M.	16.0	20.0	5.0	15.0
Boise, Idaho	21.5	24.5	5.0	19.0
Twin Falls	23.5	27.5	5.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	16.0	*22.0	...	13.0
Philadelphia	16.0	*22.0	...	13.0
Scranton	16.0	*22.0	...	13.0
Allentown	16.0	*22.0	...	13.0
Altoona	16.0	*22.0	...	13.0
Erie	15.0	*19.0	...	13.0
Dover, Del.	19.0	21.0	3.0	13.0
Wilmington	19.0	21.0	3.0	13.0
Springf'd, Mass.	17.5	19.5	2.0	12.5
Worcester	17.3	19.3	2.0	12.3
Boston	16.5	18.5	2.0	11.5
Providence, R.I.	16.7	18.7	2.0	11.7
Hartford, Conn.	17.5	19.5	2.0	12.5
New Haven	17.6	19.6	2.0	12.6

*Includes tax of 4 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	17.6	19.6	2.0	15.6
New York*	16.3	18.3	2.0	14.3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	16.5	18.5	2.0	13.5
Augusta, Me.	19.8	21.8	4.0	14.8
Manch't'r, N. H.	19.4	21.4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	19.0	21.0	6.0	15.5
Augusta	22.0	24.0	6.0	15.5
Macon	20.0	22.0	6.0	14.0
Savannah	20.0	22.0	6.0	14.0
Birm'ham, Ala.	18.0	20.0	5.0	14.5
Mobile	18.0	18.0	4.0	13.5
Montgomery	19.0	21.0	4.0	15.0
Clarks'le, Miss.	19.0	21.0	5.0	12.5
Jackson	19.0	21.0	5.0	13.0
Natchez	19.0	21.0	5.0	13.0
Gulfport	20.5	22.5	5.0	13.0
Vicksburg	19.0	21.0	5.0	13.0
Jack'ville, Fla.	20.0	21.0	6.0	14.0
Miami	21.0	23.0	6.0	14.0
Pensacola	19.0	19.0	6.0	13.5
Tampa	20.0	22.0	5.0	13.0
Lexington, Ky.	19.0	20.0	5.0	14.5
Covington	21.0	22.0	5.0	14.5
Louisville	18.0	20.0	5.0	13.0
Ashland	19.0	21.0	5.0	15.0
Catlettsburg	19.0	21.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Birmingham and Mobile state taxes add 1-cent city levy. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	16.5	18.5	2.0	13.5
Newark, N. J.	15.5	17.5	2.0	12.5
Annapolis, Md.	18.0	20.0	4.0	13.0
Baltimore	17.2	19.2	4.0	10.5
Cumberland	19.0	21.0	4.0	14.0
Wash'gton, D.C.	15.7	17.7	2.0	12.7
Danville, Va.	19.8	21.8	5.0	13.8
Norfolk	18.3	20.3	5.0	11.0
Petersburg	19.3	21.3	5.0	13.3
Roanoke	19.0	20.0	5.0	14.0
Richmond	16.7	18.7	5.0	12.7
Charles'n, W.Va.	18.5	20.5	4.0	12.5
Keyser	19.1	21.1	4.0	14.1
Parkersburg	17.2	19.2	4.0	11.2
Wheeling	18.4	20.4	4.0	12.4
Charlotte, N. C.	20.3	20.3	5.0	14.3
Hickory	20.6	22.6	5.0	14.6
Mt. Airy	20.5	22.5	5.0	14.5
Salisbury	20.7	22.7	5.0	14.5
Charleston, S. C.	19.3	21.3	6.0	12.3
Columbia	21.2	23.2	6.0	14.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Wholesale price	Retail price	Incl'ds tax of	tank wagon
Fresno	19.0	17.0	3.0	17.0
San Francisco	19.0	12.0	3.0	15.5
Los Angeles	18.5	16.5	3.0	15.5
Reno, Nev.	24.0	22.0	4.0	19.0
Portland, Ore.	20.5	18.5	4.0	16.5
Seattle, Wash.	19.5	12.5	3.0	16.5
Tacoma	19.5	17.5	3.0	16.5
Spokane	21.5	21.5	3.0	20.5
Phoenix, Ariz.	17.0	20.0	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where discount is 1 cent.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	19.25	21.25	4.0	13.25
McCook	19.75	22.75	4.0	14.75
Norfolk	19.75	21.75	4.0	13.75
N. Platte	20.75	22.75	4.0	14.50
Scottsbluff	20.75	22.75	4.0	14.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	20.0	21.0	4.0	†14.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	14.5	14.5	5.0	12.0
Baton Rouge	16.0	16.0	4.0	14.0
Alexandria†	18.0	18.0	5.0	14.0
Lafayette*	18.0	18.0	5.0	14.0
Lake Charles*	18.0	18.0	5.0	14.0
Shreveport	14.0	18.0	4.0	14.0
Knovx'le, Tenn.	20.0	22.0	5.0	16.0
Memphis	18.0	20.0	5.0	12.5
Chattanooga	20.0	20.0	5.0	16.0
Nashville	19.0	21.0	5.0	16.0
Bristol	20.0	22.0	5.0	14.0
Lt. Rock, Ark.	17.0	17.0	5.0	13.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in Parish of Rapides.

CRUDE OIL PRICE CHANGES

The Pure Oil Co. reduced the price of Midland, Mich., crude oil 10 cents to $1.45 per barrel, effective July 19.

The Seep Purchasing Agency reduced Corning, Ohio, crude oil 25 cents to $1.50 per barrel, effective July 19.

BARGE FUEL OIL

The first fuel oil to be shipped by barge from Muskegon, Mich., left the Lake Michigan harbor last week. The oil in the S.S. "Crude Oil" will be delivered to the Allied Oil & Transport Co. of Cleveland, Ohio. The company has built storage facilities at Cleveland and expects to make other boat shipments during the remainder of the summer and early fall. Approximately eight days are required to go from Cleveland to Muskegon.

BUYS TERMINAL SITE

The Shell Eastern Petroleum Co. has purchased a site for a bulk station near Geneva, N. Y., along the New York barge canal. Refined products will be brought to the terminal by water.

CRUDE OIL PRICES

(Continued from Page 141)

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

(Effective April 11, 1930)

Iles (Feb. 15, 1930):	
33 gravity and above	$ .87
Under 33 gravity	.86
Dutton Creek (Feb. 15, 1930)	1.35
Rock Creek, Wyo.	1.35
Salt Creek	See gravity table
Big Muddy	1.35
Grass Creek, heavy (July 27, 1928)	.90
Grass Creek, light	1.55
Mule Creek (May 21, 1929)	1.20
Elk Basin	1.55
Lance Creek	1.61
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.85
Rex Lake (February 22)	1.10
Osage	1.61
Lost Soldier (contract, May 22)	1.00
Hamilton Dome (March 14, 1927)	.85
Greybull (April 11, 1930)	1.55
Four Bear (May 21, 1929)	.85
Cat Creek	1.55
Pondera (Montana) (April 10, 1930)	1.55
Sunburst (Montana) (Feb. 15, 1930)	1.61
Hogback (Feb. 15, 1930)	1.40
Artesia (New Mexico)	1.05
Lea County	See gravity table

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (April 10, 1930)*	$1.10
Luling (April 10, 1930)	.85
Mirando (April 10, 1930)†	.85
Pettus (April 10, 1930)‡	1.40
Salt Flat (April 10, 1930)§	1.10
Thrall‡	
Lytton Springs (Lockhart)	See gravity table
Somerset (April 10, 1930):	
Below 33 gravity	$1.10
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.19
35 to 35.9 gravity	1.21
36 to 36.9 gravity	1.23
37 to 37.9 gravity	1.25
38 gravity and above	1.27

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective July 11, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$2.05
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	2.00
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	1.75
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (May 2, 1930)	1.75
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (April 11, 1930)	1.81
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (April 11, 1930)	1.47
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.80
Wayne District Oil in Cumberland Pipe Lines (April 11, 1930)	1.34

Tide Water Pipe Co.

Bradford district (July 11)	$2.10
Allegany district (July 11)	2.10

Pure Oil Co.

Cabin Creek, W. Va. (July 11)	$2.15
Kelly Creek, W. Va. (July 11)	2.00
Bradford Hollow (July 11)	2.00

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1930)

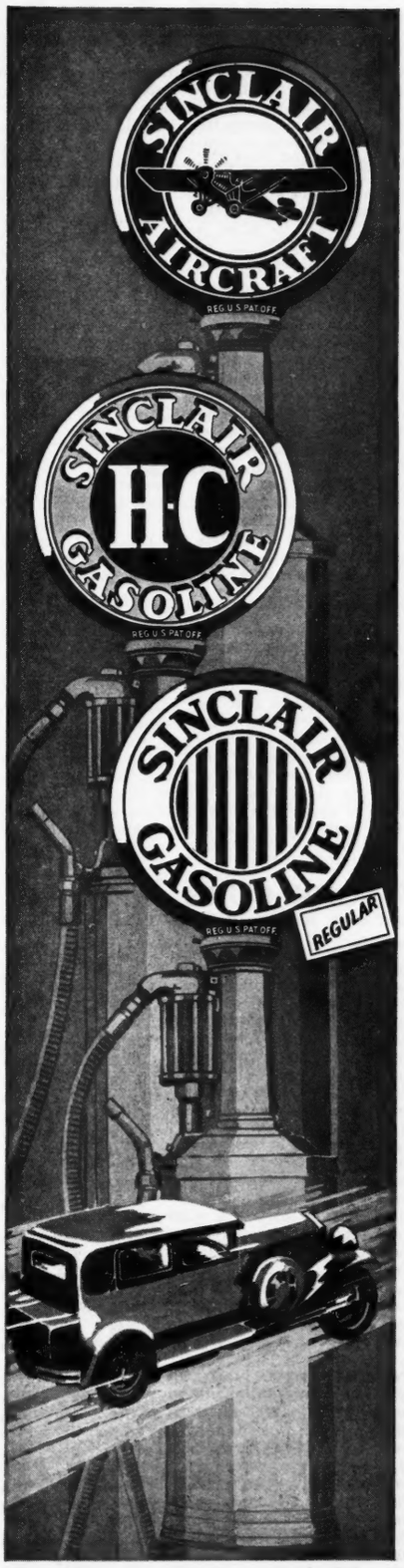
Lima (June 26, 1930)	$1.55
Wooster (June 26, 1930)	1.70
Illinois	1.65
Indiana (June 26, 1930)	1.33
Princeton	1.65
Plymouth	1.33
Western Kentucky	1.55
Midland, Mich.* (July 19)	1.45
Dundee, Mich. (April 16)†	
	Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich. (April 16)†	
	Same as Mid-Continent gravity scale
Saginaw, Mich. (April 11)†	
	Same as Mid-Continent gravity scale
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.10
Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (April 18)§	1.45
Oil Springs (Canada) (June 28, 1930)¶	1.80
Petrolia (Canada) (June 28, 1930)¶	1.80

*Posted by Pure Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. ¶Posted by Standard of Indiana for boat shipment. Local Refiners posted Mid-Continent prices on April 11.

MEXICAN CRUDE

Panuco*	$ .80

*F.o.b. ship, based on May transactions



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SINCLAIR REFINING COMPANY, INC.
45 Nassau Street, New York
Atlanta Chicago Houston Kansas City

Merger of Pan American and Lago Near

Meetings of Stockholders to Vote Upon Proposal of Directors. Not to Affect Authorized Capital of Pan American Company

Directors of Pan American Petroleum & Transport Co. and Lago Oil & Transport Co. have agreed upon a plan for the complete absorption of the latter, effecting a merger of the companies. The Pan American already owns about 97 per cent of the stock of the Lago company.

Meetings of the stockholders of the companies are to be called for August 18 to vote on the plan of the directors, under which holders of the stock of the Lago company will receive one-half share of Pan American Class B common stock for each share of Lago stock. When completed, the merger will effect a transfer to the Pan American company of all the assets of Lago. Pan American will assume all the liabilities of Lago.

The merger will not affect the authorized capital of Pan American. Stockholders of the company will retain their present certificates and no exchange or deposits will be necessary.

The Lago Oil & Transport Co. had outstanding on December 31, 3,992,689 shares of capital stock on which 71 cents a share was earned in the year. The company has no funded debt. According to the reports, Pan American would have to acquire only 119,780 shares of the Lago stock, since it already controls the remainder of the issue, representing 97 per cent of the total. The transaction would call for the issuance of 59,890 shares of Pan American Class B stock under the terms of the plan.

Liabilities of the Lago company to be assumed include at the close of 1929, affiliated companies' interest in Lago of $2,581,850, and accounts payable of $1,553,974.

The Standard Oil Co. of Indiana recently renewed its offer of an exchange of shares with the Pan American company on a basis of seven shares of Standard Oil common stock for six shares of either class of the common stock of the Pan American company. Standard already owns 93 per cent of the Class A stock and 79 per cent of the Class B stock of the latter company.

Colonial Beacon Oil

The committee on securities of the New York Produce Exchange has admitted to dealing warrants to purchase the common stock of Colonial Beacon Oil Co., subsidiary of Standard Oil Co. of New Jersey, and has ruled that the unit of trading shall be 90 units, that is, four warrants, each representing right to purchase 22½ shares of stock.

Up to and including November 1, 1930, the purchase price is $20.39 per share. Thereafter, and until the expiration date of November 1, 1931, at about $21.38, the price to be determined shortly by the company.

National Refining

National Refining Co. declared regular quarterly dividend of 37½ cents on common, payable August 15 to stock of record August 1.

Sun Oil

Report of Sun Oil Co. and subsidiaries for six months ended June 30, 1930, shows net income of $3,658,157 after interest, depreciation, depletion, federal taxes, etc., equivalent after dividend requirements on 6 per cent preferred stock, to $2.42 a share on 1,409,323 no-par shares of common stock. This compares with $3,637,540 or $2.68 a share on 1,299,934 common shares in first half of 1929.

Houston Oil

Report of Houston Oil Co. of Texas and Houston Pipe Line Co. for quarter ended June 30, 1930, shows consolidated net income of $491,168 after interest, depreciation, depletion, abandoned leases, federal taxes, etc., equivalent after dividend requirements on 6 per cent preferred stock, to $1.43 a share on 249,686 shares of common stock. This compares with $523,249, or $1.55 a share on common in preceding quarter and $434,274, or $1.20 a share in June quarter of 1929.

Consolidated net income for six months ended June 30 amounted to $1,014,417 after above charges, equal to $2.98 a share on common against $779,422, or $2.04 a share in first half of previous year.

United Gas

Special meetings of stockholders of United Gas Corp. and United Gas Co. are to be held in Dover, Del., on August 11, to consider recently proposed consolidation of the two companies under the name of United Gas Corp. Stockholders of record July 19 will be entitled to vote.

United Gas Corp. was incorporated March 29, 1930, and in June this year acquired substantial majorities of the common and preferred stocks of United Gas Co. and substantial percentages of the preferred stocks, bonds and debentures of subsidiaries of that company, as well as 100 per cent of the securities of Louisiana Gas & Fuel Co. Electric Power & Light Corp. owns in the aggregate a majority of all of the voting stocks and option warrants, including substantially all of the $7 second preferred stock of United Gas Corp.

The proposed merger provides that the merged corporation will have the same corporate powers as are now set forth in the certificate of incorporation of the present United Gas Corp. and will have authority to issue the same number of shares of all classes of stock. The provisions with reference to the voting powers, preferences, rights, qualifications, limitations or restrictions of such stock are substantially similar to the provisions now set forth in the certificate of incorporation of the present United Gas Corp.

Skelly Oil

Skelly Oil Co. declared regular quarterly dividend of 50 cents on common, payable September 15 to stock of record August 15.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

Feb. 12	47.49	Apr. 30	50.23
Feb. 19	45.85	May 7	51.67
Feb. 26	46.71	May 14	49.71
Mar. 5	46.79	May 21	50.98
Mar. 12	48.30	May 28	50.94
Mar. 19	51.00	June 4	46.65
Mar. 26	51.55	June 11	43.41
Apr. 2	53.26	June 18	42.37
Apr. 9	52.04	June 25	44.12
Apr. 16	53.39	July 2	44.11
Apr. 23	53.70	July 9	46.43

Royal Dutch

Final dividend of 14 per cent for 1929, declared in May on the ordinary stock of Royal Dutch Co., is equivalent to $1.875 a share on the New York shares. This dividend is being distributed by Chase National Bank, successor depositary for the stock, on August 13 to stock of record July 30.

Indiana Southwestern Gas

Offering of $2,500,000 Indiana Southwestern Gas & Utilities Corp. convertible 6 per cent 10-year secured notes, Series A, is being made by Guibord, White & Co., Inc., and Investment Securities Corp. at 98½ to yield over 6.20 per cent. Proceeds will be employed in retirement of certain obligations now existing, for drill-

(Continued on Page 146)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 16 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
⅜	⅛	1,100	⅛	⅛	⅛	Amer. Con. Oilfields		$11,018,000	$5	.....	.....	2⅛	.55	1½	.53	72c	⅛
4½	1½	600	2⅜	2¼	2⅜	Amer. Maracaibo	(sh)	700,000	N.P.	.....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
1⅜	1	200	1¼	1¼	1¼	Argo Oil	(sh)	683,971	$10	.....	.....	2¾	1	4½	2¼	5	1½
21	17	100	17	17	17	British American (new, C.W.I.)		$1,311,321	N.P.	25cQ*	1- 2-30	40	20½	55	32¾	62	7⅛
2¾	¾	700	1⅜	1¼	1⅜	Carib. Syndicate		$131,250	25c	.....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	24⅛	21,300	27¾	27⅛	27¾	Cities Service	(sh)	24,290,359	N.P.	30cA†	1- 2-30	58¾	40¼	90⅞	54	68½	20
93⅞	88	600	88¾	88¾	88¾	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	1- 2-30	95⅜	87	103½	94½	98¾	84
¾	¼	600	⅜	⅜	⅜	Columbia Syndicate		$2,000,000	$1	.....	.....	3⅞	1⅜	3¼	.76	2	⅛
5⅞	3½	100	3½	3½	3½	Cons. Royalty		$5,000,000	$10	15cQ	10-25-29	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	5½	700	6½	6¼	6½	Creole Petroleum E	(sh)	5,977,873	N.P.	.....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	1¼	100	½	¼	¼	Crown Central	(sh)	587,000	N.P.	.....	.....	3	.50	3¼	.76	2½	¼
21¾	12	300	12¾	12¾	12¾	Darby Petroleum	(sh)	1,019,392	N.P.	25cQ	1-15-30	12	4	33½	3¼	26	6½
11	4½	1,000	6½	6½	6½	Derby Oil & Refining	(sh)	500,000	N.P.	.....	.....	2½	74	2¼	1	11	2
60	30	50	44	44	44	Derby Oil & Refining pfd		$48,500	N.P.	.....	.....	16¾	4	21⅛	7½	44	20⅜
166⅞	117⅛	600	128⅞	126⅞	128⅞	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	1- 1-30	118	86¼	165	101⅛	209	115
1¾	¾	500	⅞	¾	⅞	Intercontinental Pet.		$5,682,000	$5	.....	.....	2½	.80	3⅜	1	2⅞	⅜
3	1⅝	100	1⅝	1⅝	1⅝	Kirby Petroleum	(sh)	750,000	N.P.	.....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4¾	1⅛	1,600	1⅞	1¾	1⅞	Leonard Oil & Dev.		$50,000,000	$25	.....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
29	18⅝	100	22	22	22	Lion Oil & Refining	(sh)	250,000	N.P.	50cQ	1-31-30	27½	20	43⅞	20	38⅞	18
55⅞	34⅛	800	39	38½	39	Lone Star Gas	(sh)	5,000,000	N.P.	20cQ	12-31-29	59⅜	37	69¼	48½	67⅞	28
⅛	⅛	400	¼	¼	¼	Magdalena Syndicate	(sh)	850,000	$1	.....	.....	2⅞	.80	1⅞	.50	1¼	¼
16	12	100	12½	12½	12½	Margay Oils		$160,000	N.P.	50cQ	1-10-30	52	12	48½	32	38½	14
7½	2	200	3	3	3	Mexico-Ohio Oil		.....	.....	.....	.....	12⅛	5	8	2¾	6⅜	2½
¾	⅜	400	⅜	⅜	⅜	Mountain & Gulf		$4,000,000	$1	2cQ	1-15-30	1½	1	1¾	.76	1½	¼
12⅛	8	700	8⅞	8½	8⅞	Mountain Producers		$1,682,182	$10	40cQ	1- 2-30	29¼	22¾	28⅞	19½	22⅞	7
3½	2⅜	300	2½	2½	2½	New Bradford Oil		$1,095,291	$5	12½cQ	1-15-30	5⅞	4⅝	5⅝	4¼	5	2¼
7¼	3⅛	100	3⅛	3⅛	3⅛	New Mex. & Arizona		$1,000,000	$1	.....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	6	200	6¾	6¾	6¾	North Central Texas	(sh)	400,000	N.P.	15cQ	12- 2-29	12¾	9½	14¼	8½	18½	6¼
2½	½	400	¾	¾	¾	Pandem	(sh)	489,875	N.P.	.....	.....	9⅜	3¼	6	2⅛	3½	½
4⅜	1⅞	200	2⅛	2	2⅛	Pantapec Oil	(sh)	1,506,000	N.P.	.....	.....	12⅛	7	15⅝	8½	10¼	1⅞
..	..	No sales.				Pennok Oil		$150,000	N.P.	.....	.....	13½	5⅛	7¾	4⅞	7¾	4⅜
10½	8⅛	100	8⅛	8⅛	8⅛	Red Bank Oil	(sh)	250,000	N.P.	.....	.....	24⅜	7	18	4⅞	16	9⅜
5⅜	2⅛	200	4⅛	4	4	Reiter-Foster	(sh)	388,584	N.P.	10cQ	12- 9-29	15½	3½	12⅞	4⅛	8½	1⅛
8⅝	3⅝	100	4⅞	4⅞	4⅞	Ryan Consolidated	(sh)	500,000	N.P.	.....	.....	7	4½	12	4⅛	11	3
2½	1⅜	200	1⅜	1⅜	1⅜	Salt Creek Consolidated	(sh)	1,286,300	$10	10cQ	1- 2-30	8	5¼	7¼	5½	5⅞	1⅜
15¼	8¼	100	10¼	10¼	10¼	Salt Creek Producers	(sh)	1,496,859	$10	50cQ	2- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750,000	$5	.....	.....	7	1¼	3½	1	2½	⅛
..	..	No sales.				Transcontinental pfd		.....	.....	.....	.....	..	..	..	..	..	..
4½	2	100	2⅜	2⅜	2⅜	Venezuelan Petroleum	(sh)	755,090	$5	5cQ	11-15-29	7⅜	4¼	9⅛	4¾	6½	1⅜
5	2	100	4¼	4¼	4¼	Woodley Petroleum		$500,000	$1	.....	.....	7	4¾	8¼	4⅞	9½	2
2½	½	400	1⅜	1⅜	1⅜	Y Oil & Gas (new)		$100.000	N.P.	.....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 16 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
18½	12¼	400	18½	18⅜	18½	Anglo-American Oil (vot. C.O.D.)		£4,192,635	£1	.36⅔	11-27-29	21⅝	17⅞	22⅜	14⅞	17	11
1	⅜	300	½	½	½	Atlantic Lobos		.....	....	.....	.....	..	..	..	..	..	..
25	14	100	20	20	20	Borne Scrymser		$1,000,000	$25	$18A	10-15-29	69	50	56½	44½	46½	25
69	55¼	100	56¼	56¼	56¼	Buckeye Pipe Line		$10,000,000	$50	$1Q	12-14-29	60	45	76	53	74¼	55
184⅞	140⅛	100	184¼	184¼	184¼	Chesebrough Mfg.		$3,000,000	$25	1Q*	12-30-29	126	76½	161	117	210	130
17¾	10	500	10	10	10	Continental Oil (V.T.C.)		$36,057,840	$10	.....	12-15-27	22⅝	16¼	23	16	29	10
65¾	30½	50	35	35	35	Cumberland Pipe Line		$1,500,000	$50	$1Q	12-15-29	137	89	114	67	75¾	40
54¾	41	50	41	41	41	Eureka Pipe Line		$5,000,000	$100	$1Q	11- 1-29	68½	47	88	64⅛	70½	42
7	2½	200	4	4	4	Galena Oil Corp.		$16,000,000	$100	.....	.....	13½	3½	13	4¼	6½	3
119	78	400	92½	92½	92½	Humble Oil & Refining		$74,103,300	$25	50cQ	1- 1-30	68½	54	114¾	59¼	128	74⅛
320	303	50	320	320	320	Illinois Pipe Line		$20,000,000	$100	$10SA	12-16-29	182	123¾	290½	176½	340½	260
30	18⅛	800	20½	20¼	20½	Imperial Oil of Canada (new)	(sh)	26,421,768	N.P.	12½cQ	12- 2-29	64¾	37¾	104	56¾	41	22
41	31⅞	300	33	32⅝	33	Indiana Pipe Line		$3,000,000	$10	50cQ‡	2-15-30	94½	61	91⅞	74⅝	41⅞	26
24	17⅝	300	18¾	18¾	18¾	International Pet.	(sh)	14,247,088	N.P.	12½cQ	12-16-29	29	28¼	55	35	30⅜	15
22⅜	15⅛	400	16	16	16	National Transit		$6,362,500	$12.50	25cQ‡	12-16-29	24	13½	32⅜	19⅜	25⅛	10½
21⅜	10⅛	300	18	18	18	New York Transit (new)		$1,000,000	$10	40cQ†	1-15-30	44½	31¼	75	38½	17½	10
54	35½	400	39	35½	35½	Northern Pipe Line		$2,000,000	$50	$28A	1- 2-30	100	70	69	56½	63	41
76⅜	62⅛	1,100	68	67¼	67¾	Ohio Oil		$60,000,000	$25	5cQ‡	12-14-29	67⅞	52	84	58½	79⅞	64⅛
32	17	100	19½	19½	19½	Penn Mex. Fuel		$10,000,000	$25	50cQ	12-14-29	39	12	84	28	44½	20
33	15	200	15	15	15	Solar Refining		$4,000,000	$25	$1.25SA	12-20-29	..	..	..	..	50	29
20⅞	13	100	16⅞	16⅞	16⅞	Southern Pipe Line		$1,000,000	$10	50cQ	.....	27¼	15½	19	15	22½	13
45⅞	35	100	37	37	37	South Penn Oil (new)		$30,000,000	$25	50cQ	12-30-29	41½	35	71⅞	36¾	60¼	35⅛
65	35	100	45¼	45¼	45¼	Southwest Pa. Pipe Lines		$1,750,000	$50	$1Q	1- 10-29	83	55½	102	70	70	60
59⅞	47⅝	4,000	51	50⅜	50⅞	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	12-16-29	81½	64⅜	95⅞	70⅞	63	45
40½	30⅛	1,700	32	31⅞	32	Standard Oil of Kentucky		$25,654,516	$10	40cQ	12-16-29	130	111½	179¾	122¼	46⅞	29
48⅞	44⅛	100	46½	46½	46½	Standard Oil of Nebraska		$4,649,225	$25	62½cQ‡	12-20-29	49½	40	54⅞	39⅞	50¼	40
108½	77	200	80¾	80½	80½	Standard Oil of Ohio		$14,000,000	$25	62½cQ	1- 2-30	87½	72	134	71	129	60
10	7	100	7	7	7	Swan-Finch Co.		$861,466	$25	.....	12- 2-29	21	14½	23½	16	18	10
97⅞	76¼	2,700	87⅞	87¼	87⅞	Vacuum Oil Co.		$126,180,350	$25	$1Q	12-20-29	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 16 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	100	23⅝	23¼	23⅝	Amerada Corp.		922.075	N.P.	50cQ	1-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17½
37	15¼	1,200	21¼	20	20¾	American Republic Corp.	(sh)	209.180	N.P.	.....	3-20-29	82½	35⅛	85	51⅜	64¾	12½
51	32½	40	51	51	51	Associated Oil		$57.260.300	$25	50cQ	12-31-29	50¼	35	53⅜	37½	47¼	34½
51⅜	30⅛	3,300	38¼	37⅛	38¼	Atlantic Refining		$66.763.775	$25	25cQ	12-16-29	131⅝	104	66⅜	50	77⅞	30
34	20½	11,100	25¼	23¾	25¼	Barnsdall Corp.		$56,546,600	$25	50cQ	12- 7-29	35½	20¾	53	20	49⅛	20
30½	18⅜	13,700	22⅞	21⅜	22⅞	Continental Oil of Delaware	(sh)	4,741.554	N.P.	.....	3-31-27	..	..	..	..	47⅛	18
71⅛	38⅝	500	47	46¼	47	General Asphalt	(sh)	413.333	N.P.	50cQ	.....	96¾	65	94⅞	68	94¾	42¼
116⅞	52¼	17,800	86¼	82¾	85⅞	Houston Oil		$24.968.600	$100	...	.....	175¾	60⅛	167	79	109	26
32	19⅜	5,100	23¼	21¾	23⅛	Independent Oil & Gas	(sh)	1,362,295	N.P.	50cQ	1-31-30	32¾	17⅝	38⅜	21¾	39⅜	17⅜
28⅜	8⅞	5,900	13⅛	12⅜	13⅛	Indian Refining		$12,565,070	$10	.....	5-31-24	12⅛	7⅝	39⅝	9	53	13⅛
26½	21¼	1,700	27⅛	25⅞	27⅛	Lago Oil & Transport	(sh)	3,992,122	N.P.	.....	5- 1-27	37¾	20½	39⅛	27⅜	38⅜	16½
12	8	2,700	10½	10	10⅜	Louisiana Oil Refining	(sh)	1,190.063	N.P.	.....	.....	18⅛	10	19¾	9⅜	18	7
10⅝	4½	200	5½	5½	5½	Maracaibo Oil	(sh)	330,000	N.P.	.....	.....	22¾	12	25½	12½	18½	5⅛
37	16½	40,300	25	22⅝	25	Mexican Seaboard	(sh)	1,244,383	N.P.	.....	12-15-20	9¼	3	72	4⅝	69⅜	9¼
33	22⅛	6,700	25⅜	25	25	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	39⅜	25½	44½	25⅛	39⅞	22⅛
2½	1⅞	1,300	1⅛	1	1⅛	Middle States, ctfs.		$23,736,130	$10	.....	7- 1-23	3¾	1⅝	7⅜	2⅜	5⅛	¾
64¼	51⅝	400	59	58⅞	59	Pan American P. & T.		$50,084,700	$50	.....	10-20-27	65⅞	40⅛	54⅞	38¼	69	40½
67½	50½	1,800	59	58⅜	59	Pan American P. & T. "B"		$121,110,650	$50	.....	11-15-24	66⅜	40¼	58⅞	37⅜	69¼	40½
..	..	No sales.				Pan American Western B		$400,000	N.P.	.....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	4⅛	300	8¼	8	8	Panhandle P. & R.	(sh)	199,370	N.P.	.....	.....	18⅞	8	21⅜	11½	15¼	3
80	47½	100	73	73	73	Panhandle P. & R. pfd.		$2,564,400	$100	.....	7- 2-23	83	54	108	70	76	47½
44¾	29½	31,500	34¼	33½	34¼	Phillips Petroleum	(sh)	2,593,075	N.P.	50cQ	1- 2-30	60¼	36¼	53⅞	35¼	47	24¼
..	..	No sales.				Phillips Petroleum rts		.....	....	.....	.....	..	..	..	..	..	..
2½	1	200	1⅛	1⅛	1⅛	Pierce Oil Corp.		$29,622,831	$25	.....	.....	1⅛	½	5¼	½	3⅜	1
7⅛	2¼	3,700	5⅞	5¼	5⅞	Pierce Petroleum	(sh)	2,500.000	N.P.	.....	.....	5½	2½	7	3½	5⅞	½
54	35⅝	600	37¾	37½	37½	Prairie Oil & Gas		$60,848,000	$25	50cQ*	12-31-29	55½	45⅝	68	46	65⅝	40½
60	44⅛	1,500	48½	47⅞	47⅞	Prairie Pipe Line		$101,250,000	$25	75cQ†	12-31-29	190	130⅜	280	172	65	45
11⅞	6½	500	8⅛	7½	8⅛	Producers & Refiners		$37,438,950	$50	.....	9-15-23	33⅞	16⅜	29⅞	16	25⅞	4
40	30	100	32	32	32	Producers & Refiners pfd.		$2,845,350	$50	.....	5- 1-25	50	36⅞	49⅝	41	46¾	25½
27¼	19½	5,800	22⅜	22	22⅜	Pure Oil		$75,959,250	$25	37½cQ	12- 2-29	33½	25	31⅝	19	30¾	20
28¼	14¾	11,800	18⅜	17¾	18	Richfield Oil		$52,410,875	$25	50cQ	11-15-29	28⅝	25⅜	56	23	49⅝	20
25¾	15⅝	1,300	18¼	17¾	18	Rio Grande Oil	(sh)	1,236,270	N.P.	$2A	7-25-29	..	..	37½	32	42½	15
56½	49⅛	3,500	54¾	54	54¾	Royal Dutch, N. Y.	(sh)	611,303	$1.873	.....	9-13-29	54½	44¼	64	44⅝	64	43⅛
48⅝	42⅜	10	46	46	46	Shell Transport & Trading Co.		£23,985,000	£1	$1.45	7-23-29	48⅝	40½	47⅞	41⅜	57½	40⅝
25½	18	2,400	19¼	18¾	19¼	Shell Union Oil	(sh)	13,066,497	N.P.	35cQ	12-31-29	31¾	23⅝	39¼	23¼	31⅜	19
37	18	1,600	23	22½	23	Simms Petroleum		$8.353.620	$10	40cQ	12-14-29	25⅜	14¼	27¼	18⅛	40⅛	15
82	20	96,500	26⅜	24¼	26¼	Sinclair Consolidated	(sh)	5,500.000	N.P.	50cQ	1-15-30	22⅜	15	46⅝	17⅜	45	21
112¼	108	100	110½	110½	110½	Sinclair Consolidated pfd.		$16,025.250	$100	$2Q	11-15-29	104½	97	110	102½	111	103
42	28½	3,100	32	31¼	32	Skelly Oil		$27,441,250	$25	50cQ	12-16-29	37⅜	24⅛	42⅝	25	40½	28
75	55½	4,400	63⅝	62⅛	63⅝	Standard of California	(sh)	12,594,098	N.P.	62½cQ	2-15-30	60⅜	50⅜	80	63	81⅞	51⅜
49	29	4,000	36½	34	36	Standard Oil of Kansas		$8,000.000	$25	50cQ	12-16-29	20⅞	14⅝	37⅜	15	33⅜	18
84⅞	58	159,200	74⅞	71½	74½	Standard Oil of New Jersey		$634,999,200	$25	25cQ*	12-16-29	41⅜	35⅛	59⅜	37⅜	83	49
40⅝	30	15,800	33¾	32⅝	33¾	Standard Oil of New York		$445,223,675	$25	40cQ	12-16-29	34⅛	29¾	44¼	28¾	48⅛	31⅜
70	50	200	59	58⅞	59	Sun Oil	(sh)	1,416,869	N.P.	25cQ	12-16-29	34⅞	30	77	31½	86⅝	55
9⅜	5	600	6	5⅝	6	Superior Oil Corp.	(sh)	776,979	N.P.	.....	12-20-20	..	..	..	..	24	5¾
60½	50⅛	2,700	53⅞	53⅛	53⅝	The Texas Corporation		$246,204,900	$25	75cQ	1- 1-30	58	45	74¾	50	71⅞	50
14⅜	8¼	200	9⅜	9⅜	9⅜	Texas Pacific Coal & Oil Co.		$9,304,890	$10	2½ % A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9⅛
31	19½	100	25½	25½	25½	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	12-31-29	29½	19	41½	19⅝	40	14
94⅞	83	200	83	83	83	Tide Water 5½% pfd.		$19,947,000	$100	$1.25Q	11-15-29	90⅛	85	100⅛	86	97½	85⅛
17¾	10¾	3,400	14½	14⅛	14¼	Tide Water Associated	(sh)	5,560.424	N.P.	30cS	2-15-30	19⅛	15¾	25	14⅜	23½	10
89¾	78	100	81	81	81	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	2- 2-30	..	..	..	..	90⅞	74⅛
24	16¼	10,600	19¼	18¾	19	Transcontinental Oil	(sh)	3,742,029	N.P.	.....	.....	10⅜	3¾	14⅜	7¼	15¼	5⅛
50	37	700	42½	41½	42½	Union Oil of California		$104,342,375	$25	50cQ	11- 9-29	56½	39⅝	58	42⅜	57	42⅛
38½	25¼	800	30	28½	29¾	Union Tank Car	(sh)	1,254,048	$100	$1.25Q	12- 2-29	127½	94	128⅛	110	163¾	121⅞
27	12¾	2,300	13¾	13¼	13⅝	Warner-Quinlan	(sh)	632.948	N.P.	50cQ	1- 2-30	34½	24½	44⅞	26	42⅞	15
..	..	No sales.				White Eagle Oil & Refining	(sh)	505.100	N.P.	50cQ	1- 20-30	27½	20	38	20⅛	38	25
21	11½	100	16¾	16¾	16¾	Wilcox Oil & Gas	(sh)	428,907	N.P.	.....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock.

In comparing highs and lows for the several years in the three tables it will be necessary to take into consideration cases where there have been splits in the stock.

CONSTRUCTION PROGRAM OF CITIES SERVICE CO.

(Continued from Page 65)

tracts have been awarded and work is now under way.

Of major importance is the addition of 15 compressor station units or a total of 15,000 horsepower to the stations which transport the gas through the 20-inch line from the Texas Panhandle to Wichita, Kansas City and adjacent territory. Two units each are being added to compressor stations at Pampa and Higgins, Tex.; Mooreland, Okla., and Corwin, Matfield Green and Ottawa in Kansas.

Three units are being added to the compressor station at Wichita. The added units will increase the daily capacity of the Texas line from approximately 100,000,000 feet to approximately 125,000,000 feet of natural gas.

Construction is under way on the 32-mile extension of the Oklahoma City 20-inch line from Dilworth, Okla., to a point a few miles south of Wichita, where it will connect the Oklahoma City Field with the company's distribution system serving northern markets.

The new compressor station under construction at Blackwell includes five units or a total of 5,000 horsepower which will force gas from the Oklahoma City Field to compressor stations at Cambridge and at Wichita. Additional compressor units may be added later to the Blackwell station.

The capacity of the company's 16-inch pipe line which transports natural gas from Seminole, Hughes and Okfuskee Counties in Oklahoma will be increased by a 4,000-horsepower compressor station now under construction at Drumright. This line connects with the Texas line at Ottawa.

Necessary replacements and revamping of the Dilworth to Cambridge 16-inch line is going forward in preparation for operating the line under higher pressure and increased capacity. Considerable replacement and reconditioning work has been done on the Riverton, Topeka and Quapaw lines. The laying of 15 miles of 16-inch pipe line between Independence, Kans., and Joplin, Mo., was completed recently. The extension of a 16-inch pipe line from Lawrence, Kans., to Topeka, started last year, was completed this season.

The announcement of a general increase in pipe line capacity follows closely the recent announcement by Cities Service Gas Co. of the construction of a new 8-inch natural gas pipe line from Lyons, Kans., to Superior, Neb., and a 12-inch line from Ottawa, Kans., to Sedalia, Mo.

The Lyons-Superior line, a distance of approximately 116 miles, also includes approximately 123 miles of lateral lines. The project is expected to be completed next month. Construction is now under way on the Ottawa-Sedalia 12-inch line which is approximately 110 miles long.

MAJOR REFINERS WILL USE GREAT LAKES LINE

(Continued from Page 138)

tion has a large refinery at Cushing, Okla.

It is also believed that a transportation and marketing plan can be worked out later which will make it possible for smaller refiners in the two states to tender shipments.

All the companies mentioned have bulk and retail distribution with jobber contracts in part or all of the territory to be served by the pipe line. It is also said that the pipe line system will build additional pipe lines for those tendering shipments in cases where justified by the volume of business to be obtained.

The line as shown in the accompanying map will be approximately 1,350 miles long with a capacity of 30,000 bbls. daily. Construction work on the line will start next month. It is expected that shipments will be made as far north as Omaha shortly after the first of the year.

HYDROGENATION WILL ASSURE FUTURE SUPPLY

(Continued from Page 138)

Bergius as early as 1913, is still in the experimental stage, and will probably require years before it becomes commercially practicable. In explaining the process, Mr. Fieldner pointed out that the easiest method for the production of gasoline is by the simple distillation process.

Recently, he states, a hydrogenation process has been developed by which the crude petroleum is distilled under pressure, increasing the yield from certain heavy crudes from 5 per cent to as high as 45 per cent.

By this process the crude oil is not only distilled at extreme temperature and under great pressure, but at the same time hydrogen gas is applied to the crude, which unites with carbon and gases released in the distillation process to form more gasoline. The process is claimed to return 100 per cent by weight of gasoline from crude oil.

Additional Expense

"Obviously," Mr. Fieldner states, "the enormous amount of added expense arising from this process would make immediate commercial application of the process impractical. However, we may go from a feast to a famine in a few years, and possibly back to a feast again." Showing that the value of the process lies in its possible use in the case of necessity.

Concerning its possible influence on the price of gasoline to the ultimate consumer, Mr. Fieldner expresses his doubt that it would ever make gasoline any cheaper. He states that we can never hope to get gasoline any cheaper than we are getting it now. However, he believes it will have the effect of preventing it getting any higher in case of a limitation of supply, since it will check any "skyrocketing" of prices due to shortage.

The development of the process to the point of commercial utility will increase employment, due to the added amount of work necessary to produce it. Simple distillation of gasoline requires only a few men, whereas the "working gasoline" requires the services of many more laborers, according to Mr. Fieldner.

He states that, contrary to the general opinion, gasoline produced by the hydrogenation process is of higher quality than ordinary distilled gasoline. By the simple distillation process, he states, ingredients which bring about "motor knock" remain in the gasoline. These substances may be removed, either by the admixture of tetraethyl of lead, or by cracking.

ACCURACY REQUIRED IN SELECTING INSTRUMENTS

(Continued from Page 137)

can be easily made unless a thorough study of testing methods is undertaken.

Information on Testing

Valuable information on testing will be supplied by the United States Bureau of Standards, and manufacturers are always more than willing to advise their customers on practical testing procedure. A few brief hints only can be given here.

First. Secure a set of certified thermometers and hydrometers. We recommend the use of "like" thermometer standards. By that we mean thermometers exactly like the ones being tested. Errors due to reading at different degrees of immersion and varying stem temperatures are eliminated when the thermometer standard is identical to the instrument being tested.

Second. Build, for testing thermometers, one or more well stirred comparison baths, the temperature of which can be held to near a given point.

Our own company is in a position to furnish a set of blue prints showing in a general way the type of testing apparatus that should be used for thermometer standardization work.

The testing of hydrometers is somewhat simpler. Most laboratories are sufficiently familiar with gravity testing, so that they have little difficulty in making comparisons with standard hydrometers. If care is taken to keep the temperature constant, a good comparison can be made by first reading the standard hydrometer, then quickly removing it and substituting the hydrometer, being tested. An ordinary large size hydrometer jar can be used. The testing liquid should be oil.

Accuracy of Instruments

A word as to the permanency of thermometers and hydrometers, after a careful inspection has indicated that these instruments meet specifications. Generally any change that might take place in a well made and properly annealed thermometer is inappreciable. Occasional checks should be made, however, for various things may happen which will cause the thermometer to read inaccurately.

We call particular attention to separation of the mercury and the appearance of small bubbles of gas in the bulb or in the bore. If these cannot be made to disappear by manipulation, the thermometer should be discarded as unreliable.

Hydrometers, provided their scales do not slip or the glass is not worn by use, should not change after years of use. But even here periodic inspection is advisable.

The other class of instruments mentioned, includes such well known instruments as colorimeters, viscosimeters, flash testers, etc. Here, with the exception of the Saybolt viscosimeter tube, we have now no means for obtaining an accuracy certificate.

Much reliance, therefore, must necessarily be placed in the manufacturer, for faulty workmanship, not easily detected, may introduce large discrepancies, even though the apparatus apparently meets the dimensional specifications.

For example, the Saybolt chronometer and the Union colorimeter, when in perfect condition, will give reproducible color determinations. But poor sources of light, scratched and dirty color standards, defective optical eye pieces, may introduce error of several points in the color reading.

It would be undoubtedly of interest to discuss each individual test from the standpoint of its accuracy value, not only when received but after a given period of time, but we have not time for this today.

Maintenance

There are few industries, the laboratory condition of which are more severe on instruments than oil. While oil itself is noncorrosive, the fumes and impurities present in the atmosphere of most petroleum refineries are far from conducive to the long life of instruments.

These destructive influences quite frequently work unnoticed until some day a disputed test brings to light an instrument always considered reliable, but nevertheless sadly in need of repair or adjustment.

These remarks are particularly applicable to the old reliable Saybolt viscosimeter. Even though the tube, the thermometers, the stop watch and flask have been certified as to the accuracy, it should not be taken for granted that these parts will not wear or deteriorate.

Other instruments, such as the Cleveland Open Tester, the Distillation, Carbon Residue, and Cloud & Pour Test apparatus are not so delicate, and any change which may take place can be easily detected. But the Pensky-Martens and Tag Closted Testers are dependent on the correct mechanical operation of certain parts, and it has been shown that even a small deviation from the proper construction of these parts may introduce a considerable error in the flash or firepoint.

PAN AMERICAN AND LAGO MERGER NEAR

(Continued from Page 144)

ing of additional wells and to provide working capital for development and expansion of the properties which are located in Texas and Indiana.

Lone Star Gas

Lone Star Gas Corp. declared regular quarterly dividend of $1.63 on the preferred, payable August 1 to stock of record July 22.

Missouri-Kansas

Missouri-Kansas Pipe Line Co. has extended time in which rights to subscribe for Class B voting trust certificates may be exercised to August 25 from July 25. Previously extension had been granted to July 25 from June 25.

Sinclair Consolidated

Sinclair Consolidated Oil Corp. declared the regular quarterly dividend of $2 on the preferred, payable August 15 to stock of record August 1. Alvin Untermeyer has been elected an additional director.

UNIVERSITY LEASE SALE ADDS $1,134,180 TO FUND

By L. E. Bredberg

FORT WORTH, Tex., July 19.—Land Commissioner J. H. Walker of the State of Texas awarded 84 leases to various companies which made high bids under a lease sale held January 2, 1929, as advertised by the late Land Commissioner J. T. Robinson and disputed through all the courts of the State until a final decision by the Supreme Court declaring the sale valid.

The leases include 50,960 acres of University of Texas land in Andrews, Ward and Winkler Counties, and brought a total of $1,134,180 to the permanent fund of the university.

The following awards were made by Mr. Walker: Amerada Petroleum Corp., 10 sections in Blocks 11, 12 and 13, in Andrews County for $54,352. Atlantic Oil Producing Co., nine tracts, consisting of 7½ sections in Block 16, Ward County, and Blocks 11 and 13 in Andrews County, for $166,991. The California Co., seven sections in Blocks 11 and 13 in Andrews County, for $39,264. Deane Gill, Abilene, Tex., one-quarter section in Block 16, Ward County, for $12,340. Humble Oil & Refining Co., four tracts, consisting of 3½ sections in Block 16, Ward County, for $104,592. Gibson and Johnson, Fort Worth, 11 sections in Block 16, Ward County, for $749,656. Mid-Kansas Oil & Gas Co., section in Block 11, Andrews County, for $5,888. Dixie Oil Co. (formerly McMan Oil & Gas Co.'s bid) one-quarter section in Block 16, Ward County, for $16,696. Phillips Petroleum Co., five sections in Blocks 11 and 12, Andrews County, for $13,216. C. L. Renaud, Fort Worth, 23 sections in Blocks 11, 12 and 13, Andrews County, and 3 sections in Block 11, Andrews and Winkler Counties, for $44,385. B. L. Ryan, Dallas, five sections in Blocks 11 and 12, Andrews County, for $17,248. Skelly Oil Co., one section in Block 13, Andrews County, for $5,007. Vacuum Oil Co., one section in Block 12, Andrews County, for $3,340.

Various attempts were made to have the land withdrawn from sale and after the receipt of the applications for leases many attempts were made to invalidate the sale and have all applications and bids returned. The dispute was carried to the legislature and resulted in the enactment of new lease laws for the State for the disposition of university lands and the creation of a board for their lease. The Supreme Court gave the final decision in June, holding the sale valid and requiring that the land be leased to the highest bidder.

The State now has a lease board office at San Angelo with Dr. Hal Bybee in charge.

MISS GALLAGHER DIES

Miss Mary B. Gallagher, for the past 14 years private secretary to C. G. Stebbins of the Eagle Gasoline Co., died July 17 at Rochester, Minn. Ill health obliged her to leave Tulsa last February to live with a sister at Mystic, Iowa. She was to have been operated upon at the Mayo clinic but died the day before the date set.

START OHIO PLANT

The Ohio Oil Co. has started operating its new natural gasoline plant in the Playa Del Rey area of California. The plant at present is handling approximately 1,000,000 feet of gas daily. This gas has a gasoline content of approximately 3½ gallons per 1,000 cubic feet. The plant has sufficient capacity to handle 5,000,000 feet of gas daily.

EXTENSION OF DRILLING IN VAN POOL NORTH AND EAST OF UNIT PLAN

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 21.—Acreage to the north and east of Unit Plan No. 1 now looks as if it was to witness considerable drilling in the next few weeks, although the companies which own the majority of this acreage favor curtailing production, and holding down drilling wherever they have properties. So far, no definite action has been taken in ratifying Unit Plan No. 2, and rumors only report that it has failed to take effect, but Broderick & Calvert, independent operators of Fort Worth, have rigged up their test on the lease they hold on 2.07 acres on the north end of the Mrs. M. F. Shirley 38-acre tract, near the Free Methodist Church lot, and are ready to spud in. This will call for three offset locations by the Pure Oil Co. on its acreage if the test proves a success, and it is practically sure of making a commercial producer since it lies directly between production in the field to the west, and the Humble Oil & Refining Co.'s No. 1 Carroll to the northeast, which is a commercial producer.

Two offsets to the Humble well are drilling, and the Imperator Oil Co., which has a lease on a strip on the west side of the G. W. Carter farm, under which The Texas Company holds lease, is building a derrick to spud an east offset to the Humble well. The Texas Company is drilling an east offset to the Imperator location, and is down below 900 feet. The Pure Oil Co. will drill a southeast offset to the Humble well on its M. L. McMahon lease in the John Walling Survey. The company is now moving in material for this test, which is outside of the No. 1 Unit Plan. This makes the fourth test for this immediate area, which was opened but two weeks ago.

Will Cause Offsets

George Anderson and others of Fort Worth have a rig up on a 6¼-acre lease which is said to exist on the NE cor. of Humble Oil & Refining Co.'s Sanger Brothers lease in the John Walling Survey. This test is about one-quarter mile south of the Broderick & Calvert derrick, and the two tests will no doubt cause several offsets and considerable drilling around them. Humble Oil & Refining Co., Shell Petroleum Corp. and the Pure Oil Co. will be forced to drill offsets to the Anderson test if it proves a commercial producer. However, this test may not prove such a producer, for the Humble Oil & Refining Co.'s No. 1 Freeman, which is 4,300 feet due south in the 20-acre J. A. Freeman farm, does not look like a possible producer at this time as it encountered salt water and filled up 1,900 feet in 20 minutes at 3,064 feet. It is now shut down at 3,100 feet and appears as a limit to the field on the east, and the first dry hole to be recorded.

Limit to West?

While the east side of the field appears defined, the west side is also receiving a check in that direction, for No. 1 Crim of the Pure Oil Co., in the A. Crim 50-acre farm, is now shut down at 3,382 feet with but slight possibilities of making a commercial producer, although it might possibly make a small pumper, as the same company's No. 1 R. C. Crim, 1,500 feet to the southwest, is only a 35-bbl. pumper after being plugged back from a total depth of 3,082 feet to 3,033 feet to shut off water. The second Crim well is now below the water level, and appears as the second dry hole in the Van Field, defining the limits to the west.

There are only three or four pumpers in the field at present, but several other wells have pumping equipment installed ready for pumping, and this would lead one to believe they have fallen off in production and can be produced only by pumping.

Lack of water for drilling purposes is retarding progress somewhat, and the Pure Oil Co. is laying a 12-inch water main from its Jones lease about 5 miles to the southeast of the field, where there is an ample supply of water.

Two "pickup" dams are being built in the field, one to the southeast to prevent waste oil from draining into the Neches River, and one to the north to prevent it from draining into the Sabine River, for the Van Field is on a divide and drains in two directions.

Tests to North

Jenkins and others of Dallas have a wooden derrick up in the V. T. Davis farm, about 3,000 feet north of production in the Van Pool, and have won legal permission for installing material, and look almost certain of gaining permission for drilling on this lease, to which they claim ownership. The Pure Oil Co. is also claiming ownership to the lease and has a derrick up in the SW cor. of the farm, opposite to the Jenkins derrick.

Three thousand feet north of the Jenkins derrick the Imperator Oil Co. failed to make a commercial producer from the Nacatoch sand in its test on its 3.01-acre strip on the west side of the G. J. Luther farm on which Humble Oil & Refining Co. has a lease. Top of the sand was found at 1,138 feet, and the hole was bottomed at 1,155 feet. After setting casing and testing, the well had only a small amount of oil, and will probably be abandoned at this depth unless carried down to test the Woodbine sand from which production is coming in the Van Pool.

The 10-inch line of the Pure-Van Pipe Line to Smiths Bluff from the Van Pool has been transporting about 30,000 bbls. of crude daily, no more oil being loaded out from the loading rack at Chandler to where the first outlet was construction soon after the discovery of the pool. The new line to the Gulf started pumping oil July 11, with three main pump stations working, and three more booster stations being erected for future use. Twenty-five thousand barrels per day will be the average amount run through the new line, for the field has been held to this amount in production since its discovery, and the producing companies in the field are not desirous of throwing more oil on the already overflooded market.

The first passenger train was run into Van on July 17 over the Texas Short Line.

COMPLETIONS IN EAST CENTRAL TEXAS

Week Ending July 19

Navarro County

Bateman and others' No. 1 McGowan, dry and abandoned, total depth 324 feet.

Van Zandt County

Short and others' No. 1 B. C. Anderson, dry and abandoned, Pecan Gap 2,540-2,650 feet, total depth 3,711 feet. Pure Oil Co.'s No. 2 D. R. Howell, initial production 526 bbls., total depth 2,943 feet. Same company's No. 1 J. J. Murphree 80 acres, initial production 323 bbls., total depth 2,948 feet. Same company's No. 2 J. J. Bracken, initial production 326 bbls., total depth 2,953 feet. Same company's No. 1 R. E. Collett, initial production 180 bbls., total depth 2,934 feet. Same company's No. 7 R. L. Wells, initial production 300 bbls., total depth 2,839 feet. Shell Petroleum Corp.'s No. 1 N. M. Fowler, initial production 451 bbls., total depth 2,957 feet. These wells are all completed on chokes, mostly three-eighth or one-half inch chokes.

EAST CENTRAL TEXAS

Boggy Creek	3,600
Cedar Creek	40
Currie	295
Hill County	35
Mexia	4,243
Minerva	580
Nigger Creek	200
Powell	5,662
Richland	190
Thrall	40
Van	24,307
Wortham	845
Total	40,037
Total week ending July 12	40,001
Increase	36

EAST CENTRAL TEXAS WILDCATS

Week Ending July 21

DELTA COUNTY

C. A. Everts' No. 1 Smith, 300 ft. N and 150 ft. W of 38-ac. tract, 3 miles NE of Cooper in J. U. Ranfro Sur. ..... Rig up.

FANNIN COUNTY

North American Pet. Co.'s No. 1 Allen, 700 ft. N and 150 ft. W in N. R. Broadfoot Sur., 9 miles N of Honeygrove ..... Shut down 977 ft.

E. M. Rogers' No. 1 McSwan, 300 ft. S and E of Michael Daly Sur., in Juana Telgando Sur., 1½ miles NE of Lomasco ..... Shut down 1,100 ft.

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 55-acre tract in A. York Sur. ..... Shut down 2,510 ft.

L. G. Bradstreet's No. 1 Julia J. Shaunessy, 2,776 ft. from N and 300 ft. from W of Sur. or farm, John Isard Sur. ..... Rig up.

Chapman's No. 1 Cade, 1,662 ft. from N and 3,294 ft. from W of J. B. Dorsey Sur. ..... Shut down 3,060 ft.

Cranfill & Germany's No. 1 Clara C. Stow, 2,203 ft. from N and 471 ft. from S of Guadalupe Acosta Sur., ... Shut down 2,661 ft.

George Pace et al's No. 1 Mrs. Sarah Anthony, 273 ft. N and 132 ft. W of SE cor. of S. Anthony 632-ac. tract, Jose W. Battvan Sur. ..... Rig up.

Sunray Oil Co.'s No. 1 Davis, 600 ft. S and W of most easterly NE cor. of 164-ac. tract, Eldridge Harris Sur. ..... Rig up.

HUNT COUNTY

Branson et al's No. 1 West, 350 ft. N, 350 ft. W of W 60-ac. tract, Jas. Rooces Sur. ..... Drlg. 2,500 ft.

KAUFMAN COUNTY

Shaw & Alexander's No. 1 Barrow, 2,360 ft. S and 200 ft. W of R. A. Terrell Sur., 4½ miles N of McCoy ..... pudded and shut down 21 ft.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Killam & Phillips' No. 1 Wilson, 150 ft. S and E of 62½-ac. tract in Wm. Bridges Sur. ..... Spudded.

Navarro Oil Co.'s No. 2 Mathews, 3,600 ft. from S and 1,140 ft. from W of Smith Sur., 3 miles E of Dawson ..... T. D. 1,450 ft.; fishing.

Wheelock's No. 1 Castles, 150 ft. from S and W of 31.5-ac. tract in Abner Mathews Sur., 1 mile N of Eureka ..... Coring 3,235 ft.

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in F. Finley Sur. ..... Shut down 910 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

Owens & Sloan's No. 1 Hill, 150 ft. out of NW cor. of 150-ac. tract, T. McMahon Sur. ..... Shut down 4,285 ft.

RUSK COUNTY

Clem S. Clark's No. 1 Maude R. McCafflin, 427 ft. from N, 166 ft. from W of farm, Ellie Blackburn Sur. .... Location.

Mass et al's No. 1 Mathews, 2,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Shut down 2,338 ft.

SMITH COUNTY

McElreath & Suggett's No. 1 J. Gilliam, 200 ft. from N and 200 ft. from W of Gilliam 78-acre tract, J. C. Robertson Sur ..... Rig up.

Owens & Sloan Oil Co.'s No. 1 Starnes, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Drlg. 1,450 ft.

Sutton et al's No. 1 W. D. Hammond, 150 ft. out of SW cor. W. D. Hammond tract in Jas. Reed Sur. ..... Drlg. 4,225 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Lagrone Sur., 4 miles SE of Winona ..... Drlg. 1,685 ft.

VAN ZANDT COUNTY

Anderson's No. 1 Sanger, 150 ft. from N and W of Humble Sanger lease in John Walling Sur. ..... Derrick.

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Broderick & Calvert's No. 1 M. F. Shirley, 150 ft. from W in C of N and S lines of 2.1-acre strip, John Walling Sur. ..... Derrick.

E. L. Chapman's No. 1 Charles Wolverton, 215 ft. from N, 60 ft. S of NE cor. of Wolverton 10-ac. tract, William James Sur. ..... Shut down 2,905 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Shut down 2,275 ft.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... T. D. 3,071 ft.; will abandon.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox in A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line ..... Derrick.

H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Derrick.

B. P. Hervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Drlg. 2,640 ft.

Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.

Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Derrick.

Priest et al's No. 1 Blewitt, 175 ft. NW and SW of SE cor. of NW 84-ac. tract, E. Porter Sur. ..... Shut down 2,008 ft.

Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick completed.

Pure Oil Co.'s No. 1 W. F. Swain, 220 ft. from W line and 250 ft. from N line 48-ac. tract, John Walling Sur. ..... Rig up and shut down.

Pure Oil Co.'s No. 1 J. R. Shivers, 225 ft. W of E line, and 200 ft. S of N line of lease, H. Myers Sur. .... Location.

Pure Oil Co.'s No. 1 M. L. McMahon 48 acres, 150 ft. E of W line, 150 ft. S of N line of lease, John Walling Sur. ..... Location.

L. B. Pruitt et al's No. 1 T. J. Luther, 50 ft. E, 170 ft. from N of SW cor. of T. J. Luther 32-acre tract, M. Gross Sur. ..... Set 10-in. csg. 144 ft.

Texas Chief Oil Co.'s No. 1 Foster, 600 ft. E of W line and 600 ft. N of S line of W. P. Foster's 151-ac. tract in F. Montgomery Sur., 7 miles south of Canton ..... Shut down 1,265 ft.

The Texas Company's No. 1 W. H. White, 225 ft. E of W line and 748 ft. from N line 20-ac. tract, John Walling Sur. ..... Shut down 304 ft.

Van Zandt Oil & Dev. Co.'s No. 1 Robinson, located NE cor. of Y'Barbo Sur., 4 miles E of Grand Saline .... Drlg. 4,370 ft.

WOOD COUNTY

Big Indian Oil Co.'s No. 1 R. J. King, 450 ft. W of E line and 150 ft. N of S line of King's 109-ac. tract in Wm. Barnhill Sur. ..... Shut down 4,544 ft.; Woodbine sand 4,535-44 ft.

HOBBS AREA PRORATED AT 35,000 BARRELS

(Continued from Page 29)

D. Grimes in Section 29-19s-38e, that is now the largest well in the field, is:

3,870-3,880	Hard brown lime.
3,880-3,900	Lime and anhydrite.
3,900-3,925	Hard white lime.
3,925-3,935	Brown lime. Oil and gas.
3,935-3,945	Hard brown lime and hard shale.
3,945-3,955	White lime, brown lime and little anhydrite.
3,955-3,975	Brown lime, white lime and anhydrite—very hard.
3,975-3,985	Hard lime. Cored.
3,985-3,995	Brown lime. Oil and gas.
3,995-4,002	Very hard white lime.
4,002-4,006	White lime, medium hard.
4,006-4,028	White lime, very hard.
4,028-4,040	Porous white lime, fairly soft (lost returns in this lime and it took 45 minutes with the pumps wide open to get a small trickle of returns back. After recovering returns well tried to blow out and it was necessary to close blowout preventer and pump hard to hold pressure.).
4,040-4,068	Soft brown lime. Oil and gas.
4,068-4,078	Brown lime medium hard, but would not core oil or gas.
4,078-4,090	Brown lime. Oil and gas.
4,090-4,095	Porous white lime—fairly hard.
4,095-4,100	Brown lime—hard. Oil and gas.
4,100-4,110	Brown lime—hard. Oil and gas.
4,110-4,120	Brown lime—hard. Oil and gas.
4,120-4,130	Dark brown lime, medium hard. Lost returns.
4,130-4,135	Dark brown lime—medium hard.
4,135-4,140	Brown lime—fairly soft.
4,140-4,150	Brown lime—fairly soft. Lost returns.
4,150-4,160	Hard brown lime—oil and gas. Total depth.

This well was cored from 3,975 to 4,095 feet and drilled with rock bit from 4,095 to 4,150 feet and then again cored from 4,150 to 4,160 feet where it was completed as the oil and gas showing was satisfactory.

Casing Set High

The 7-inch casing was set and cemented at 3,826 feet in this well and when drilling was completed 3-inch tubing was run to within a short distance of the bottom of the hole and the well first tested through it. It was necessary to run the swab inside the tubing a few times to relieve the pressure of the mud on the formation and when this was done and the well had cleared itself the first 15-minute gauge showed a production of 75 bbls. of oil.

The next test was through casing and tubing and the well made 205 bbls. of oil in 15 minutes and on the second run through casing and tubing made 249 bbls. in 15 minutes. The closed-in pressure at the end of these tests at about 5 p. m. July 7 was 1,150 pounds on the casing and 425 pounds on the tubing.

The initial production of this well showed less than 2 per cent water and mud and as it is conservatively estimated that 5,000 bbls. of mud and water were lost in the hole in the last 30 hours of drilling and coring it is believed that the well will make a larger flow when this material has been cleaned from the producing horizon. Between 5 p. m. July 7 and 8 a. m. July 8 the pressure on the shut-in casing built up from 1,150 pounds to 1,300 pounds, which seems to bear out this theory.

Will Set Casing Lower

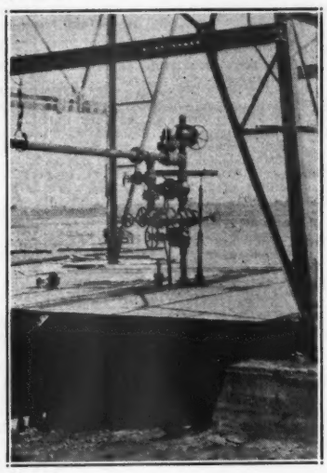
Operators with experience in the Winkler County pool seem to think that it will be of advantage to set and cement the 7-inch string of casing at a point some distance below the top of this producing zone so that the top gas can be cut off and conserved to aid in future production of the oil. The tubing will be run below the bottom of the casing and as now set is open ended and without packer between it and the casing.

Drilling in the Hobbs area is practically all done with rotary tools and the standard type heavy rigs are used. One Hydrill outfit and one Sheldon Machinery Co. outfit are also in use. The Humble Oil & Refining Co.'s No. 1 Bowers that opened the north end of the pool was drilled by Sheldon-Burden Co. and they have since moved to a new location on that lease and are now drilling with this outfit.

The Hydrill outfit is drilling Getty Oil Co.'s No. 4 McKinley, after having drilled to 2,765 feet on its No. 3 location which was shut down at that depth because of an agreement reached with the Humble Oil & Refining Co., who shut down its No. 7 Bowers at 2,750 feet to avoid spacing these wells too close and requiring additional offsets in that immediate area.

Noninflammable Gas

In drilling wells in the north end of the field most of them have encountered



Typical well head hookup for 3-inch tubing on Hobbs, N. Mex., well. The 7-inch casing is connected with the trap at point below derrick floor.

a showing of noninflammable gas at about 2,400 feet, which has caused more or less trouble. This is known as "air" to the drillers in the field and so far as could be ascertained has not been analyzed, but it seems safe to assume that it is made up largely of nitrogen.

This assumption is made because nitrogen has been found in deeper sands in this pool as shown by the analysis of the gas from 3,500 feet in Mid-West's No. 13 State in the south end of the pool, which is:

Methane	53.8	per cent
Ethane	20.5	per cent
CO_2	.4	per cent
O_2	.2	per cent
N_2	25.1	per cent
	100.0	per cent

In the field at Ira, in Scurry County, Texas, almost due east of the Hobbs Pool, there is a gas sand that is producing better than 90 per cent nitrogen. This gas is used to furnish power for engines and pumps because it is noninflammable and has a pressure of about 150 pounds per square inch at casing head.

This gas found at the 2,400-foot level in the Hobbs Pool does not appear to be accumulated in very large volumes and it has been found that if it is permitted to flow open to the atmosphere it will do no damage.

The Shell Petroleum Corp.'s No. 2-A State drilled into this gas zone at 2,350 feet and thought that it might be dissipated by shutting in the well. This was done and at the end of 14 hours' shut-in period drilling was resumed. The gas blew out with such force that the rotary turntable with two men on it was lifted and all floor boards in the derrick blown loose. The escape of gas assumed the proportions of an explosion, and, although it is estimated that not over 100,000 feet of it was contained in this pocket, it did considerable damage to the derrick.

On other wells they have avoided the shutting in of this gas; in fact most wells now drill through this zone with clear water and have no trouble.

Other gas is found at from 2,750 to 2,850 feet and from 3,150 to 3,250 feet that comes from lenzes in the anhydrite and the big gas is found below the 3,700-foot level as shown by the log of the No. 1 Grimes well.

The gas from the lime carries some hydrogen sulphide and the amount is estimated at from 1½ to 2 per cent, but so far as known no analysis has been made. The test on the Mid-West's No. 13 State, referred to above, is reported as showing no H_2S but there is no doubt of its being present in wells in the north portion of the field.

Two tank setters were overcome by gas when they entered a tank on the Texas Pacific Coal & Oil Co.'s State lease in Section 24-18s-37e. Just how this gas accumulated in this empty tank is a mystery for it was set as a gas-tight tank and no oil had ever been turned into it.

Water Level

Most operators in the field now seem to agree that there is a water table at about —610 to —620 feet and with the surface elevation of the field at from 3,600 to 3,666 feet this would place this marker at from 4,210 to 4,286 feet. Drillers have, therefore, been careful so far not to go below the 4,200-foot depth in their wells, and most of them have been finished well above that depth on the crest of the structure, although a few located on the flank of the anticline have been drilled below 4,300 feet, notably the Ohio Oil Co.'s No. 1 State in Section 9-19s-38e, which was finished at 4,312 feet depth for a 50-bbl. per day initial production on December 1, 1929.

Midwest Refining Co.'s No. 1 State in Section 9-19s-38e, the discovery well of the pool, is reported to have drilled into water at 4,245 feet and then plugged back and finished the well in lime found from 4,105 to 4,165 feet for an initial production of 700 bbls.

The location of the water with relation to the oil and gas producing zone is one of the major problems of this area, but it is the consensus of opinion among all operators that every precaution must be taken to prevent the wells from drilling into water on the top of the structure for they desire to avoid the water troubles encountered in Hendricks Pool due to wells drilling too deep and into the water which lies below all of these lime pools in the West Texas districts.

With the casing set low and the tubing run to permit control of rate of production and gas oil ratio, this field should avoid water encroachment for a long time and recover the maximum amount of oil by natural flow methods.

One Well to 40 Acres

It is also advocated that but one well to each 40-acre unit be drilled and this well be located in the center of the tract. Based upon a total recovery of less than 12,000 bbls. of oil per acre in the Winkler Pool to date, and this representing very nearly all that they can expect to get, it would seem that this practice of drilling but one well to each 40-acre unit in the Hobbs area is quite logical.

Wells cost from $75,000 to $90,000 to complete and at this time the oil is selling for about $1.02 per barrel so the total recovery on the 40-acre unit would gross about $480,000 and this would leave a nice margin of profit for each operation considering that each unit will only be permitted to produce its oil upon the basis of 25 per cent by acreage and 75 per cent on average potential flow from the well or wells on the unit.

If four wells are drilled the cost will be from $300,000 to $360,000 for development and if some portions of the producing horizon run below the 12,000-bbl. per acre average, it would mean that the margin of earnings would be too small for this money should earn not less than 6 per cent on the investment and if the period of recovery of the oil from the pool is spaced out over a period of four or five years as now anticipated under the proration conditions interest alone will amount to from $90,000 to $108,000 on the investment required for four wells to the 40-acre lease.

All these facts are known to the producers and they are planning their drilling campaign accordingly, and it is therefore predicted that Hobbs Pool will be developed in an orderly manner, and, if it is as large in area as the Hendricks Pool, there will be approximately 150 more locations to be made if one well is drilled to the 40-acre unit, or if drilled as the Hendricks Pool there will be a total of over 600 wells. Hendricks Pool had 630 wells completed, of which 18 were dry holes, and at the present time there are about 550 wells producing and they are making about 10 to 12 bbls. of water to every barrel of oil on the average, with a few wells flowing as much as 20,000 bbls. of water to 50 bbls. of oil daily.

C. G. STALEY UMPIRE FOR HOBBS, N. MEX., AREA

(Continued from Page 29)

sition, C. G. Staley, who is now state geologist for the State of New Mexico, was offered the position of umpire for the Hobbs area, and accepted.

This selection is a fortunate one in the opinion of the producers conversant with conditions in this area for Mr. Staley has a first-hand knowledge of the problems of the field, is a competent geologist and engineer with a long practical experience in many oil fields, and also is sufficiently conversant with local conditions to be of great service to the joint interests of the State and the oil industry.

Mr. Staley resides in Albuquerque, N. Mex., although his office is in Santa Fe and he has occupied the position of state geologist since April, 1927. Prior to that appointment, Mr. Staley served as assistant to Glenn B. Morgan, state geologist for Wyoming during 1919 to 1923.

About 20 years ago Mr. Staley started work carrying a rod in the United States Geological Survey and later drilled several wells in Wyoming, Montana and Texas from 1914 to 1917.

He was then employed by Walter Brothers of London prior to accepting the position of assistant geologist for Wyoming, and after leaving that position was employed in consulting work in Mexico and the Rocky Mountain region until he was appointed state geologist for New Mexico in April, 1927.

Mr. Staley is a member of the American Association of Petroleum Geologists.

It is the opinion of the executive committee that, if at all practical, the proration would be considered effective as of July 10. The tentative gauges made some time ago will remain in effect until such time as the umpire could re-take them in the above prescribed manner and that thereafter adjustments will be made which will bring all of the gauging into line with that finally made by the umpire.

The growth of the field is a very interesting fact and promises to place the Hobbs area among the major producing fields in the Permian Basin. Since the order was filed on July 10, 17 new locations have been made and in as much as units of production can only be accredited when producing, it will naturally follow that drilling will continue until each 40-acre unit within the producing area is furnishing its quota of oil.

MICHIGAN PIPE LINE

MUSKEGON, Mich., July 19.—Development by the Pure Oil Co. of an elaborate petroleum terminal near the mouth of the Saginaw River at Bay City is progressing rapidly. The company's new 6-inch line from Mount Pleasant to Bay City, a distance of about 40 miles, is expected to be completed soon. The company also has under construction on its 58-acre Bay City terminal site eight storage tanks with a capacity of 55,000 bbls. each. Plans also are being considered to double the capacity of the storage tank farm from 440,000 to 880,000 bbls. by erection of eight more 55,000-bbl. tanks. It is expected the first oil will be pumped from the Mount Pleasant Field to Bay City during the coming week.

Dredges are cutting a slip in the river 900 feet long, 165 feet wide and from 16 to 18 feet deep, adjacent to which a new 600-foot dock will be constructed for loading oil tankers.

Crude oil produced in the Mount Pleasant Field will be shipped by boat from the new terminal to Sarnia, Ontario, to the Imperial refinery there or to other plants of the Pure Oil Co.

BUYS SUNSHINE COMPANY

The Crew Levick Co., subsidiary of the Cities Service Co., has purchased the business of the Sunshine Oil Co. of Rochester, N. Y. The deal involves acquisition of eight service stations in Rochester, and more than 150 dealer accounts, in addition to distributing equipment, and station sites in Spencerport and Lakeville, N. Y.

Western Petroleum Refiners Announce Yearly Committees

The personnel of the permanent committees of the Western Petroleum Refiners Association were announced this week by L. R. Crawford, newly elected president.

Few changes were made in the membership of the committees. A. S. Hopkins, president of the Standard Oil Co. of Kansas, Neodesha, Kans., was appointed chairman of the manufacturer's, succeeding Mr. Crawford. H. A. Trower, vice president of the Phillips Petroleum Co., Bartlesville, Okla., is the new chairman of the traffic committee. P. C. Spencer of the Producers & Refiners Corp., Independence, Kans., is chairman of the legal committee. P. F. Gwynn continues as chairman of the export committee.

Following is a list of the committees and their membership:

Manufacturers Committee

A. S. Hopkins, chairman, Standard Oil Co. of Kansas; H. W. Camp, Empire Oil & Refining Co.; Walter Miller, Continental Oil Co.; J. M. Wadsworth, Independent Oil & Gas Co.; Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.; Dr. F. W. L. Tydeman, Shell Petroleum Corp.; M. P. Youker, Phillips Petroleum Co.; R. J. Black, Sinclair Refining Co.; J. A. Sartori, Producers & Refiners Corp.; B. P. Crittenden, Louisiana Oil Refining Corp.; R. T. Colquette, Root Refining Co.; Sylvester Dayson, Lion Oil Refining Co.; W. F. Simms, Panhandle Refining Co.; H. D. Bennett, Mid-Continent Petroleum Corp.; E. A. Metcalf, Standard Oil Co. of Kansas; F. N. Williams, Simms Oil Co.; D. H. Cristman, Shreveport-El Dorado Pipe Line Co.; K. J. Smith, Skelly Oil Co.; J. B. Edwards, White Star Refining Co.; F. E. Holsten, Barnsdall Refineries, Inc.; E. J. Mary, Cosden Oil Co.; J. V. Gaudet, Chalmette Petroleum Corp.

Finance Committee

L. R. Crawford, chairman, Producers & Refiners Corp.; George D. Locke, Barnsdall Refineries, Inc.; M. J. Grogan, Louisiana Oil Refining Corp.; E. H. Eddleman, American Refining Properties.

Traffic Committee

H. A. Trower, chairman, Phillips Petroleum Co.; F. H. Walker, Shreveport-El Dorado Pipe Line Co.; B. J. Burchett, Shaffer Oil & Refining Co.; D. F. McCarthy, Producers & Refiners Corp.; H. W. Roe, Mid-Continent Petroleum Corp.; E. W. Sieboldt, Shell Petroleum Corp.; A. F. Winn, Skelly Oil Co.; S. B. Myers, Independent Oil & Gas Co.; H. W. Yeager, American Refining Properties; C. R. Musgrave, Phillips Petroleum Co.; W. W. Klingensmith, Transcontinental Oil Co.; H. G. Watts, Derby Oil & Refining Corp.; W. B. Knight, Lion Oil Refining Co.

Credits and Accounting Committee

R. R. Irwin, chairman, White Eagle Oil & Refining Co.; W. Z. Brown, Producers & Refiners Corp.; B. H. Markham, Continental Oil Co.; J. M. Judson, Sinclair Refining Co.; F. H. Bowman, Pure Oil Co.; M. W. Bottomfield, Transcontinental Oil Co.; M. A. Chambers, Panhandle Refining Co.; H. M. Edinger, Barnsdall Refineries, Inc.; Charles Klein, Mid-Continent Petroleum Corp.; A. J. Ahlum, Crystal Oil Refining Corp.; R. F. Barnes, Eason Oil Co.; J. A. McCreery, Champlin Refining Co.; O. W. Crick, Independent Oil & Gas Co.; G. R. Baysinger, Lion Oil Refining Co.; O. K. Wing, Phillips Petroleum Co.; J. D. Powell, Skelly Oil Co.; H. Canon, Root Refining Co.

Marketing Committee

P. M. Miskell, chairman, Empire Oil & Refining Co.; R. W. McDowell, vice chairman, Mid-Continent Petroleum Corp.; D. P. Hamilton, Root Refining Co.; M. J. Grogan, Louisiana Oil Refining Corp.; G. W. Reed, Panhandle Refining Co.; George N. Moore, Cosden Oil Co.; F. A. Pielsticker, Skelly Oil Co.; R. R. Irwin, White Eagle Oil & Refining Co.; C. L. Henderson, Vickers Petroleum Co.; T. M. Martin, Lion Oil Refining Co.; W. L. Scott, American Refining Properties; E. L. Miller, Shell Petroleum Corp.; A. T. Smith, Producers & Refiners Corp.; E. S. Karstedt, Continental Oil Co.; H. A. Trower, Phillips Petroleum Co.

Legal Committee

P. C. Spencer, chairman, Producers & Refiners Corp.; J. C. Denton, Mid-Continent Petroleum Corp.; W. P. Z. German, Skelly Oil Co.

Legislative Committee

F. A. Pielsticker, chairman, Skelly Oil Co.; R. R. Irwin, White Eagle Oil & Refining Co.; E. H. Eddleman, American Refining Properties; M. J. Grogan, Louisiana Oil Refining Corp.; T. M. Martin, Lion Oil Refining Co.; L. B. McCammon, Transcontinental Oil Co.

Membership Committee

George D. Locke, chairman, Barnsdall Refineries, Inc.; D. G. Gray, Dale Oil & Refining Co.; P. M. Miskell, Empire Oil & Refining Co.; J. B. Atkins, Shreveport-El Dorado Pipe Line Co.; F. A. Pielsticker, Skelly Oil Co.; H. T. Ashton, Lubrite Refining Co.

Export Committee

P. F. Gwynn, chairman, Iowa Park Producing & Refining Co.; R. W. McDowell, Mid-Continent Petroleum Corp.; Dr. W. E. Winship, Chalmette Petroleum Corp.; Victor H. Smith, White Oak Refining Co.; W. L. Lesh, Kanotex Refining Co.

BETTER FEELING IN OKLAHOMA MARKET

(Continued from Page 28)

been especially noticeable in the Oklahoma City Field where natural gasoline output had steadily climbed to a peak around 200,000 gallons daily.

Some reduction in output has also materialized in the flush pools of the Greater Seminole area. The new production agreement will also have some effect on Texas output.

This reduction in supply forced at least three Oklahoma manufacturers to buy on the spot market to cover their July commitments. This production probably will not change the fore part of August. The situation from the buying angle is also favorable. August is a month of large withdrawals from refinery gasoline storage and this development in the past has given the manufacturers one of the best demand months of the year.

Gasoline and Naphtha

Some U. S. Motor gasoline was still selling under 6 cents the first of the week. This applied to shipments from Oklahoma and other Mid-Continent material quoted on a Group 3 basis. Refiners quoting on a 6 to 6¼-cent basis reported increased shipments orders coming from jobbers who are generally seeking the low of the market.

The higher gravities were also fractionally higher. The domestic demand for these grades has not changed and there has not been any additional export orders placed in Oklahoma.

Two refiners of blending naphthas reported increased business. The low priced natural gasolines have made the blending operation more profitable and this accounts for the increased business. The blenders were in a position to offer a high gravity blend with an endpoint of from 437 to 460 at prices under the U. S. Motor market.

Kerosene

Although current prices are unchanged some of the sellers in Oklahoma believe the kerosene situation is improving. They point to the fact that a few refiners who have been offering the cheapest material, have reduced their stocks and are now quoting in line with general market.

The general price on the 41-43 water grade is 3¼ to 3½ cents and 42-44 from 3½ to 4 cents.

Fuel Oil and Gas Oil

Fuel oil and gas oil continue to mark time. If the demand is improving as some say that it is, sellers are still in active competition and prices have not improved. Industrial sales of fuel oil for Oklahoma refiners except on contracts are largely confined to shipments within the State. Refiners attempting to sell in the St. Louis and Chicago market are usually unable to compete with the offerings of local refiners.

Prices on the several grades of fuel oil ranged from 45 to 80 cents. About the only ray of optimism for the sellers at this time is the expected heavy demand for zero fuels of all grades this winter. This is particularly true of the higher gravity fuel oils, gas oils and distillates. At this time little attention is being paid to cold test in sales where the shipment is to be consumed within the next few weeks. Buyers who are storing for the winter months, however, are insisting on low cold tests.

It is anticipated that this market will tighten and wide spreads in prices will develop dependent on the properties of the oils sold. Opinions vary as to increase to be expected in furnace oils this winter. In some sections few new installations are reported while in others the normal increase is reported. One company which has made quite an exhaustive survey of the situation states that due to the depressed financial conditions there have been fewer new installations in middle western homes. The company found, however, that many apartment houses, office buildings and similar buildings have changed from coal to oil. Ordinarily this type of burner will use a lower gravity fuel than the domestic burners. If this survey reflects actual conditions there will be a large demand for the higher gravity fuel oils of low cold test.

Furnace oil distillates are moving slowly with a price range of 2⅝ to 3 cents. A few sales of special grades of furnace oil have been made over the 3-cent maximum. There is a good demand for the low cold test, straw color gas oils of good odor and sales have been made at 2½ to 2⅝ cents.

Lubricants

Manufacturers of bright stocks reduced their prices last week. The reduction in most cases was 4 cents a gallon making the new price 28 cents for the 150-160 D grade.

On a price basis the western bright stocks are still higher than the Pennsylvania stocks which sold last week as low as 24 cents. Improvement in the latter market is dependent on curtailments which both producers and refiners of Pennsylvania grade crude oil are endeavoring to work out. With the Pennsylvania grade of prices due to consistent reductions, now lower than any period in several years and supplies more than adequate, refiners are not endeavoring to improve the market for their principal product and are quoting low priced stocks as far west as the Rocky Mountain territory.

A few refiners have also reduced their steam refined stocks from one-half to 2 cents a gallon. These reductions are coming from refiners who were quoting the top of the market and general price spreads are unchanged.

Petroleum Wax

There were more inquiries for wax in the Oklahoma market last week. Reports from the East are encouraging and sellers are hopeful that the movement which has been very slow, will improve.

STUDY PETROLEUM NITROGEN

AUSTIN, Tex., July 19.—Investigation of petroleum nitrogen with the view of isolation of the nonbasic nitrogen compounds has been started at the University of Texas by Dr. E. J. Poth of Johns Hopkins University and Dr. J. A. Bailey, professor of organic chemistry at the university.

Until Doctors Bailey and Poth started their research, the investigation had been confined to the isolation of bases in crude kerosene distillate.

The work is being carried on with the aid of the American Petroleum Institute, which made a grant of $2,000. Sulphur dioxide equipment was furnished by a German company, while a 250-pound cylinder of liquid sulphur dioxide was donated by an American concern.

GULF COAST MARKET GASOLINES ARE LOWER

HOUSTON, Tex., June 22.—Markets on all Gulf Coast refinery products were virtually stationary the past week, which has been reflected in a generally better tone in gasolines and fuel oils. Gasolines and fuel oils have been weakening for some time and the fact that the downward trend has been halted has given rise to the belief that the market is at bottom and that further reactions will be upward. Other products, pale and red oils and gas oils, have indicated no change for several months, with sales holding up sufficiently in proportion to supply to maintain a firm price structure without fluctuations.

Gasolines Tuesday were being quoted from 7¼ to 7½ cents for domestic tank car movement. Although this is a quarter cent under quotations a week ago, the present market has held unbroken for over a half a week since dropping to the new low. Business is coming in at a fair rate and with refiners looking after their stocks a strengthening of the market is anticipated.

Fuel oil is held at a low of 75 cents for cargo lots for Bunker C material, with some sellers maintaining a steady quotation of 85 cents. Material in barge lots of 10,000 to 20,000 bbls. continued to be quoted from 85 to 95 cents. Bunkering oil is quoted at $1.05 generally.

Gas oil continued steady at 3¾ to 4 cents. One spot sale was made during the week at 3⅞ cents, but the material was reported to have been slightly off standard specifications.

Pale and red oils continued to maintain an even structure with prices steady.

RICHFIELD BUYS HIAWATHA

Richfield Oil Corp. of New York has taken over the business of the Hiawatha Oil Co., of Syracuse, N. Y., operating a large bulk terminal and 19 retail filling stations.

Richfield has been extremely active in expanding its marketing outlets in up-State New York and other sections of New England during recent months.

WEST TEXAS STOVE PIPE

In West Texas where gas is burned containing appreciable quantities of hydrogen sulphide the products of combustion form a very corrosive medium and ordinary stove pipe will only last a short time.

At the Gulf Production Co. warehouse in the McElroy Field, Crane County, the

stove pipe problem has been solved by using an old discarded bailer with the bottom flared out to fit over the top connection on the stove.

The stove pipe has been in use for two seasons and appears to be good for several more. The same idea could be followed out with casing or large size pipe but the length of the bailer makes it preferable as it contains no joints.

Deaths in First Half of the Year

Lives of Many Engaged in Oil, From High Executives to Men in Field and Plant, Have Passed Away

The first half of 1930 witnessed the death of many men engaged in the oil business or the equipment industry. The grim reaper was no respector of persons and his scythe cut down the high and the lowly in every state where oil is produced. Following is a list of those who have passed away in the six-month period, the death of whom was recorded in The Oil and Gas Journal:

January

E. G. Godard, manager Houston branch of Goulds Pumps, Inc., died January 4 at Houston, Tex.

William A. Green, age 75, formerly treasurer of The Texas Company, died January 4 in a hospital at Houston, Tex.

Henry H. Brigham, president of the North American Car Corp., died suddenly January 4 in New York.

Henry M. Ernst, age 88, president of the Dempseytown Gas Co., died January 5 at Oil City, Pa. He was a partner of the late Theodore Barnsdall in natural gas operations in Venango and other Middle Field counties.

Charles Edson Carnahan, age 61, extensive oil operator in Warren and Forest Counties, Pennsylvania, died January 4 at his home in Tidioute, Pa.

Ralph H. Shattuck, age 52, connected with the producing department of the Atlantic Oil Producing Co., died January 10 at his home in Dallas, Tex.

A. W. Carnahan, age 80, died January 10 at his home in Oil City, Pa. Mr. Carnahan was a veteran of the Civil War and entered the oil business in 1865 at Pit Hole, Pa.

John Foster Archbold, age 52, of New York, died January 11 at Thomasville, Ga., of pneumonia. He was formerly president of the Prairie Oil & Gas Co. and resigned in 1909.

Harry L. Monroe, age 60, commercial vice president of the General Electric Co., died January 7 in Dallas, Tex.

Victor Machris, age 45, secretary of the Wilshire Oil Co., died January 16 at his home in Los Angeles, Calif.

Jo P. Cappeau, Jr., age 43, son of Jo P. Cappeau, of Pittsburgh, Pa., and vice president and general manager of the Colonial Royalties Co., died January 18 at his home in Tulsa.

John S. Cuneo, father of Walter Cuneo, who for many years has been representative of the Indian Refining Co. in Lawrenceville, Ill., died January 17 at Los Angeles, Calif.

John Schleck, field engineer for the Standard Oil Co. of New Jersey, was killed January 25 in an automobile accident at Palembang, Sumatra. His home was in Elizabeth, N. J.

W. F. Palmer, former executive of the Cosden Oil Co. of Tulsa, died suddenly January 20 at Long Beach, Calif., from a heart attack.

James Hubbard, age 61, died January 28 at his home in Tulsa. He entered the oil business as a roustabout and was familiar with every phase of drilling and production work.

Harry Hill Myers, age 54, producer, died January 24 at the Brazos Hotel in Houston, Tex.

Olin E. Gillett, of Owensboro, Ky., died January 6 of a complication of diseases.

E. E. Schock, of Okmulgee, Okla., producer and refiner, died January 30 at a hospital in St. Louis, following a major operation.

Charles L. Phillips, foreman of a gasoline plant of the Petroleum Securities Co., Kettleman Hills, Calif., died from burns received in an explosion January 30.

Joseph A. Plante, age 84, died January 28 at Oil City, Pa.

Charles P. Brant, age 74, driller and contractor for more than 50 years, died January 30 at his home in Indianapolis, Ind.

Francis Cole Pratt, age 63, former vice president and chairman of the manufacturing committee of the General Electric Co., died January 26 in New York.

February

Clarence W. Hodges, age 53, general purchasing agent of the Worthington Pump & Machinery Corp., died February 1 at a hospital in Paterson, N. J., following an operation.

William Fletcher Brice, age 65, producer, died February 1 at his home in Hollywood, Calif.

Benjamin F. Whitehill, age 73, veteran oil producer in the Mid-Continent and Eastern Fields, died February 9 at Columbus, Ohio.

James K. Crawford, age 59, one of the best known oil producers in America, died February 6 at his home in Tulsa. Mr. Crawford had been connected with the oil business for more than 40 years and was one of a family which had won distinction as producers and refiners and in the manufacture of oil well equipment.

Worthy J. Sullivan, age 42, oil well shooter, was killed February 6 by an explosion of nitroglycerin.

J. Whitfield Davis, age 51, chief oil dispatcher and a director of the Standard Pipe Line Co., died February 10 at his home in Shreveport, La.

George S. Mitten, age 66, oil operator and pipe line man, died February 11 at Sarnia, Ontario.

P. P. Stagg, district purchasing agent and warehouseman for the Gulf Refining Co., died February 12 at his home in Shreveport, La.

Ezekiel T. Johnson, age 90, for 54 years an oil producer, died February 18 at his home in Bradford, Pa.

William Miller Graham, retired oil operator, died February 21 at his home in Los Angeles, Calif.

Robert R. Choate, age 45, headquarters executive of the oil and marketing division of Henry L. Doherty & Co., died February 24 in New York after a brief illness with pneumonia.

John R. Loggie, age 54, producer, died February 13 at Wichita Falls, Tex.

Robert W. Wallace, age 63, producer, died February 24, at Mineral Wells, Tex.

William Samuel Calvert, age 73, well known in Canadian oil industry, died February 25 at Toronto, Canada.

March

M. C. French, producer, died March 1 at Okmulgee, Okla.

Lewis C. Duffield, age 79, veteran operator in the Eastern, Central West and Mid-Continent Fields, died March 7 in Tulsa.

Patrick J. O'Connell, salesman for the Oil Well Supply Co., died March 2 at Bradford, Pa., after two years of ill health.

Isaac M. Taylor, age 85, producer, died March 4 at his home in Bowling Green, Ohio, of pneumonia.

John Cummings, Sr., age 90, maker of oil well tools, died March 2 at Oil City, Pa.

Anson Argue, age 83, last survivor of the five Argue brothers, all prominent in the oil business, died March 5 at his home in Toledo, Ohio.

David Russell Shiras, age 85, producer, died March 14 at his home in Pittsburgh, Pa.

R. T. Hatcher, purchasing agent for Woodley Petroleum Co., of Shreveport, La., died March 15 at Shreveport.

William Pearce, age 82, civil engineer, died March 12 at Calgary, Alberta.

James McClurg Guffey, age 91, one of the most noted independent oil operators in the oil business, died March 20 at his home in Pittsburgh, Pa. He was formerly associated with John H. Galey, the firm of Guffey & Galey being organized in 1880, and for the next 25 years made important oil history.

C. R. Johnson, age 41, manager of the California district advertising office of The Oil and Gas Journal, died March 20 at his home in Los Angeles, Calif.

Albert F. Fancher, age 71, prominent oil man, died March 21 at Salamanca, N. Y.

James Devline, age 90, retired oil producer, dropped dead March 24 at Bradford, Pa.

Robert E. Hileman, age 61, superintendent of pipe lines for Cosden Pipe Line Co., died March 31.

Thomas M. Baker, driller in the Rocky Mountain region, died March 26 at Long Beach, Calif.

April

M. A. Stanton, an old-timer in the Shreveport district, died April 1 in Hot Springs, Ark.

Herbert Capewell, managing director of Beverly Oil Co., died suddenly April 10 at the Hotel Palliser at Calgary, Ontario.

O. E. Risser, father of R. D. Risser, construction superintendent of the Shell Petroleum Corp., died April 14 in St. Louis, Mo.

C. C. Bowser, pioneer operator in the Gulf Coast and Mexico, died April 5 in a hospital at Houston.

Joseph M. Regan, president and general manager of the Regan Forge & Engineering Co., died April 18 at his home in Wilmington, Calif., from heart disease.

Wallace Nesbit, age 72, formerly a director of Imperial Oil, Ltd., died April 12 at Toronto, Canada.

Roscoe Steward, field representative for the Regan Forge & Engineering Co., died April 15 in Long Beach, Calif.

Robert Hutchins McNall, age 65, retired president of the Gilbert & Barker Manufacturing Co., died April 17 at his home in New York.

R. E. McCort, a driller of Petrolia, Ontario, died April 20 on a passenger boat between British Guiana and the British West Indies.

E. E. LeMasters, age 58, general superintendent of the Oklahoma Pipe Line Co., died April 28 in a sanitarium at Battle Creek, Mich.

William G. Moncrief, president of Swan-Finch Oil Corp., died suddenly April 21 while on a vacation in California. His home was in Toronto, Canada.

C. A. Barlow, scout in the Seminole district for the Carter Oil Co., died April 30 at a hospital in Shawnee, following an operation.

May

Louis Brown, age 68, former president of the Oil Well Supply Co. and chairman of the board of directors until his retirement January 1, 1929, died May 2 at his home in Pittsburgh, Pa., from pneumonia.

G. W. Mennis, independent oil operator of Fort Worth, Tex., was killed May 2 in an airplane accident.

M. J. Bashara, producer, died May 3 at his home in Fort Worth, Tex.

Frost J. Thorn, Jr., scout for the Southern Crude Oil Purchasing Co., died May 1 at Fort Scott, Kans.

John Wilson Solley, age 84, operator in Pennsylvania and West Virginia fields, died May 5 at his winter home in St. Petersburg, Fla.

Ben M. Bell, resigned president of Pandem Oil Corp. of Wichita Falls, Tex., died May 19 at Muskogee, Okla.

Israel Culp, well-known contractor in the oil fields, died May 10 at the home of his daughter in Titusville, Pa.

Harry W. Staley, producer, died May 22 at his home in Knapp Creek, N. Y.

William Beck, age 48, superintendent for the Eastern Torpedo Co., died May 21 from burns received from an explosion of a drum of nitric acid.

F. B. Reed, age 83, father of Wade H. Reed of the Sinclair Pipe Line Co., Tulsa, died May 22 at Los Angeles, Calif.

Charles Leo Collins, age 43, an official of the Oswego Petroleum Co., Tulsa, died May 23 at his home in Tulsa.

Samuel C. Redd of Tulsa, widely known oil man, was killed in an automobile accident May 29 at Appleton, Wis.

Joseph W. Mitchell, age 59, representing Snowden & McSweeney in the New Mexico Field, died May 30 in Carlsbad, N. Mex., after a short illness.

J. L. King, age 50, vice president of the Associated Oil Co., died May 31 at his home in Los Angeles, Calif.

Isaac N. Knapp, age 79, father of Arthur Knapp, petroleum engineer with the United Gas Improvements Co., Philadelphia, Pa., died May 25 in Washington, D. C.

George F. Getty, age 75, prominent California and Mid-Continent operator, died May 31 at his home in Los Angeles, Calif.

M. L. Berryman, age 44, refiner, died May 17 at Joliet, Ill.

June

R. S. (Bob) King, age 48, president of the Blackstone Oil Co., the Keystone Royalties Corp. and the King Properties, died June 7 at St. Louis, Mo., after a brief illness.

Isaac N. Hinderliter, age 84, who entered the oil business at the close of the Civil War, died June 11 at his home in Oil City, Pa.

Charles H. Gordon, age 74, pioneer in the natural gas industry, died June 14 at his home in Tulsa.

Henry Clay Folger, age 72, former president of the Standard Oil Co. of New York, died June 7 at St. John's Hospital, Brooklyn, N. Y., following an operation.

George Tomlinson, Sr., age 69, driller, died June 10 at St. Mary's, Ontario.

Elmer Sperry, inventor of the gyroscope, died June 16 at St. John's Hospital in New York.

L. O. Whyman, for many years scout for the Empire Gas & Fuel Co., died June 12 at his home in San Antonio.

W. L. Stewart, age 61, president of the Union Oil Co. of California, died June 21 at his home in Los Angeles, Calif. Mr. Stewart was born in Titusville, Pa., and his connection with the Union Oil Co. began in 1889, the year before the Torrey Canyon, Sespe and Hardison & Stewart Oil companies were consolidated into the Union Oil Co. He had been ill two years.

Albert C. Picard, for 18 years general manager of the lubrication division of the McCord Radiator & Manufacturing Co., died suddenly June 17 at his home in Detroit, Mich.

Prof. William Henry Bristol, age 70, head of the Bristol Co., Waterbury, Conn., manufacturer of recording instruments, died June 19, at New Haven, Conn.

Joseph Hubert Kurth, age 73, president of Lufkin Foundry & Machine Co., died June 18 at Lufkin, Tex.

N. G. M. Luykx, age 65, president of Sinclair Cuba Oil Co. and former president of the Roxana Petroleum Corp., died June 20 at Tenafly, N. J.

E. T. Williams, pioneer Wyoming operator, died suddenly June 28, at his ranch in La Mission Muzquiz, Coahuila, Mexico.

Walter E. Cuneo, age 45, for many years manager of the Chicago office of the Indian Refining Co., died June 25 at Chicago.

Sir Frederick W. Black, age 67, formerly managing director of the Anglo-

Semi-Annual Number Will Contain Data Of Especial Value

The Semi-Annual Number of The Oil and Gas Journal, to be published July 31, will contain information, data and statistics of especial value to every branch of the petroleum industry. It is the only compilation of its kind available to the petroleum industry. In addition to reviews and statistics relating to every oil-producing field in the United States and Canada, this issue will contain a complete record of refinery operations and developments, weekly prices of all refined products and records of imports and exports.

Owing to the big demand for this special number and to the size of the issue the only way to be assured of a copy is to enter a subscription this week for The Oil and Gas Journal. All subscribers are taken care of before any copies of the publication are sent to newsstands and very frequently news dealers sell their limited quota within a few hours after they receive the Journals.

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Persian Oil Co., and a director of Steaua Romana (British) Ltd., died June 20 in London.

Charles A. Duke, age 62, pioneer operator in the Duke Center district, died June 23 at his home in Duke Center.

Stanley Stout, driller in the Permian Basin of Texas, died June 25 at Grand Island, Neb., from injuries received in an accident at a well.

WARNER-QUINLAN CO. ENTERS GULF COAST AREA

HOUSTON, Tex., July 21.—Entrance of the Warner-Quinlan Co. of Texas and its subsidiary, the Texas Unity Oil Co. into the Gulf Coast territory and Southwest Texas has been made with the removal of the headquarters of the company from Dallas to Houston.

The company, which already has a variety of holdings in various parts of Texas and Mexico, is expected to figure notably as an operator and a buyer of crude. In connection with its proposed Gulf Coast and Southwest Texas operations. D. M. Cashin, formerly chief geologist of Navarro Oil Co., has resigned from that company to become connected with the Warner-Quinlan Co. in the same capacity.

The company recently purchased an undivided half interest from the Landreth Production Corp. of Fort Worth, Tex., of the latter's leases on 2,415 acres in the Hobbs area of New Mexico. The deal involved 30 separate tracts and 10 pieces of royalty, totaling 822 acres. The consideration announced was $1,250,000, payable one-half cash and the remainder to be paid out of the purchasers' half of the first oil produced.

As far as the Warner-Quinlan Co. is concerned the deal was made to provide an additional source of crude supply for the refinery of the Warner-Quinlan Co., parent company of the Warner-Quinlan Co. of Texas. The refinery, located at Warners, N. J., has a capacity of 18,000 bbls. daily. The parent company, in addition to being an important refiner, is one of the largest distributors of oils on the East Coast.

J. C. McIntyre is president of the Warner-Quinlan Co. of Texas, and he, with his entire personnel has been moved to Houston.

NEW JERSEY TO SELL TIRES AND ACCESSORIES

NEW YORK, July 21.—The Standard Oil Co. of New Jersey is completing plans so that tires and automobile accessories can be sold at many of its service stations throughout its entire territory according to reports here. The company markets directly in the states of North Carolina, South Carolina, West Virginia, Virginia, New Jersey and Maryland, and through subsidiaries in several other states.

The decision to expand its tire marketing facilities follows a trial in the New England States and New York by the Beacon Oil Co., a subsidiary. The latter company started offering tires at its service stations last year and it is said that officials in the marketing department have been well satisfied with results. Dealers are also to be given the opportunity to sell tires.

OIL ALBERTA HIGHWAYS

CHATHAM, Ontario, July 26. — An experiment with road oiling has recently been conducted by the Alberta department of highways in charge of Hon. O. L. Macpherson, road oil being used for laying the dust on three of the most heavily traveled roads.

Bernard Cooper
Royalties
Mid-Continent Areas
Stevens and Morton Counties, Kansas
412 Philtower, Tulsa
Warren Hotel, Liberal, Kans.

HEAVY DUTY ROTARY DRILLING MOTOR BUILT FOR DEEP WELLS

By L. G. E. Bignell

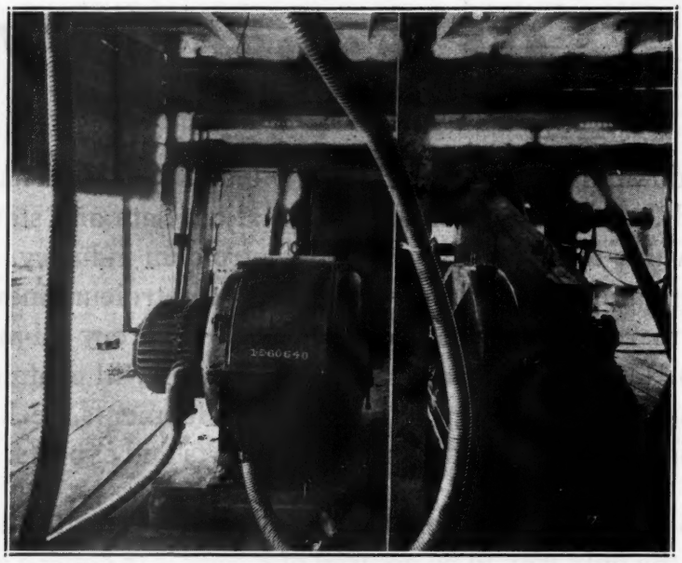
The drilling contractor and producing oil company never seem to be entirely satisfied with the size, power or strength of the equipment used in drilling the present type of very deep oil wells. This condition keeps the manufacturers constantly on the alert to make improvements in their equipment.

Rotary draw works and turntables have been made heavier and heavier until it would seem that the limits of economic size have been reached. With each new improvement in the rotary equipment the manufacturers of electric motors find they are faced with new problems.

The Allis-Chalmers Manufacturing Co. of Milwaukee, Wis., has developed a 250/85 horsepower, 440-volt, 60-cycle, 3-phase, 705 r.p.m. rotary drilling motor and has sold three sets of these machines in the Oklahoma City Pool with other prospective sales in sight in that and other oil fields.

The Allis-Chalmers Manufacturing Co. has been supplying motors to the oil industry for many years. It found some time ago drillers were demanding more power, and, while they could not definitely state just how much more power they wanted, they insisted they needed more. This placed the problem squarely up to the manufacturer. Engineers were sent into the Oklahoma City Field and made complete notes and tests to determine just what the drilling contractor needed for his rotary operations, including the heavy duty slush pumps.

As a result of this exhaustive study the new 250/85 horsepower motor is now offered to the industry and the first three installations, consisting of one drilling motor and two motors for the slush pumps to each well, are said to have proven satisfactory.



Allis-Chalmers Manufacturing Co. 85/250-horsepower motor with reduction gear installed in Oklahoma City Pool.

The motor frame is built of boiler plate welded in such a manner as to make it sand and dirt proof and almost gas proof. The oiling system is designed to reduce troubles from that source to a minimum and the over-all thermal efficiency of the motor is very high.

The motors, as used with rotary equipment, drive through a train of Falk gears with a speed reduction of 3.29 to 1 and the power is transmitted to the drawworks countershaft by heavy chain running over 22-tooth drive and 24-tooth driven sprockets when used with the Lucey B-1700 drawworks.

With this heavy duty Lucey drawworks the main shaft, upon which the drum is mounted, has three speeds, 60, 123 and 196 r.p.m., and the rope speeds as estimated on the first layer of rope on the 26-inch diameter drum are 408, 837 and 1,330 feet per minute, respectively.

The control apparatus is made especially for this unit and constructed by Cutler-Hammer Manufacturing Co. The motor control is through a star-delta system of wiring, the 85 horsepower rating being on the star portion of the system and when the current is flowing through it the motor is used for drilling, while the delta system is used for the 250 horsepower rating when the equipment is used for handling drill pipe and other heavy duty work.

The drillers report that this control system gives them great flexibility in drilling and hoisting operations and the simplicity of the reach rod connections between floor and control box necessitates only two levers or telegraph wheels at the drawworks.

Hall & Bristow have placed orders for the first nine of these motors and one set of three was used in drilling its No. 2 Lindley at Oklahoma City; the second set is on No. 2 Mueller, and the third set is being installed upon a new location. The complete equipment with control weighs about 8,800 pounds.

Grids and controls for 85/250-horsepower Allis-Chalmers Manufacturing Co. new type drilling motor.

OHIO OIL ANNOUNCES NEW RULES ON STORAGE

FINDLAY, Ohio, July 21.—Presumably in an effort to restrict the flow of crude petroleum through ordinary marketing channels, the Ohio Oil Co., effective from July 15, will make payments to independent producers only on a basis of 50 per cent of receipts. Under the plan, the Ohio Oil Co. will pay for half the crude received from independents and will store the remaining half in lines and tanks of the Buckeye Pipe Line Co. Storage costs will be borne by the independent selling the oil. Heretofore, producers paid storage only after one month. The move was seen by Ohio oil men as the only alternative to avoiding a direct cut in the price paid independent producers.

OHIO OIL MEN ORGANIZE

GIBSONBURG, Ohio, July 21.—J. A. Neiset, Gibsonburg, was elected president of the new Oil Men's Protective Association of Ohio, and P. H. Shearon, also of Gibsonburg, was named vice president when the association was organized at a meeting of more than 25 oil producers from Sandusky, Seneca, Wood and Ottawa Counties at Gibsonburg. Other officers are H. M. Johnson, Gibsonburg, secretary; and Stanley Feasel, Bettsville, treasurer. The group will offer a reward of $50 for the arrest of thieves operating in the oil fields of the four counties. One arrest was made during the week for thefts in the yards of the Ohio Oil Co., near Gibsonburg, who pleaded not guilty to a charge of grand larceny at a hearing before Justice of the Peace E. H. Buchman, at Fremont, Sandusky County, and was bound to the county grand jury and remanded to jail in default of a $500 bond.

V.O.C. PRODUCTION

NEW YORK, July 21.—Venezuelan Oil Concessions, Ltd., reports for the week ended July 12 production of 118,235 bbls. of crude in Venezuela, an average of 16,891 bbls. daily. This compares with 113,619 bbls., or 16,231 bbls. per day, in the previous week.

OPENS NEW STATIONS

CHICAGO, July 18.—The Blue Ribbon Oil Co., jobbers of petroleum products, has just opened new stations at Elmhurst and St. Charles and is building a new station at Lombard and two at Elgin. These are all western suburbs located close to each other.

All These Fields Are Within 5 Days of the J & L Memphis Warehouse

Aerial view of J & L Warehouse Memphis

The J & L Memphis warehouse organization is trained to give quickest possible service on all orders. Thus, the railroad schedule to your field represents the time in which J & L can deliver oil country tubular goods and line pipe you order from it's Memphis Warehouse.

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

J&L STEEL

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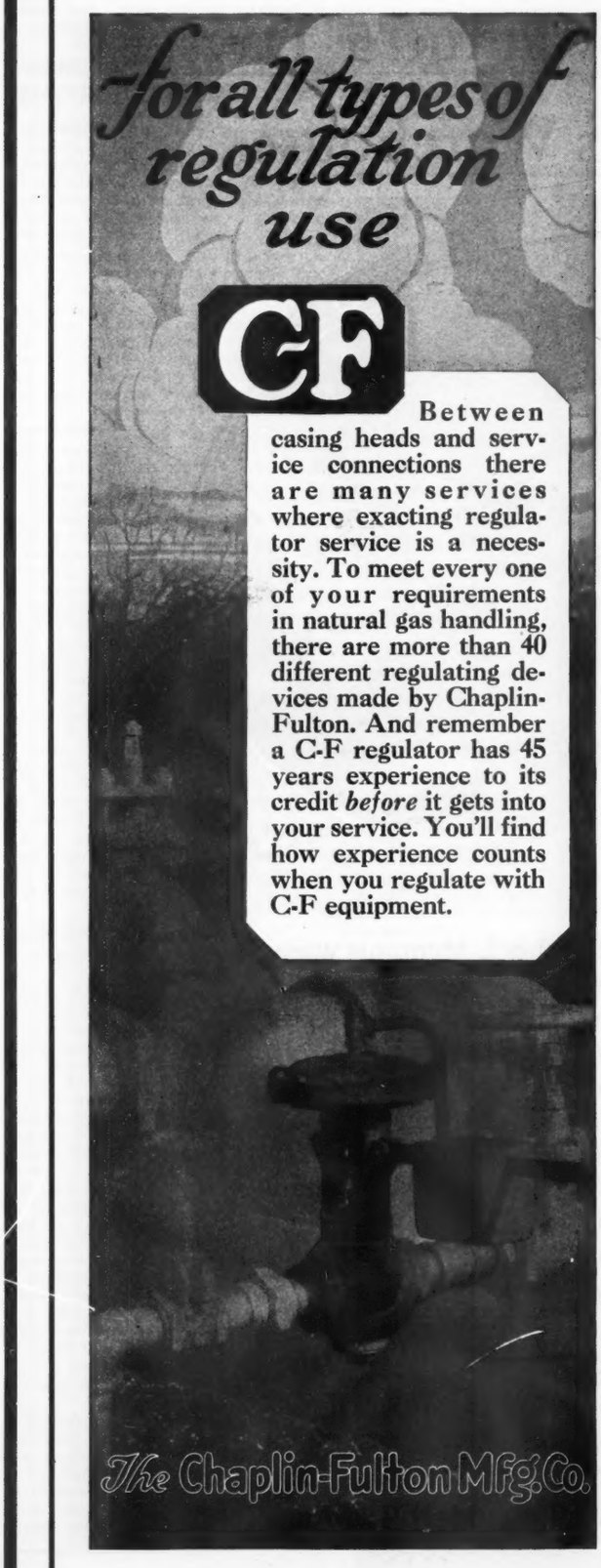
JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA


for all types of regulation use
C-F
Between casing heads and service connections there are many services where exacting regulator service is a necessity. To meet every one of your requirements in natural gas handling, there are more than 40 different regulating devices made by Chaplin-Fulton. And remember a C-F regulator has 45 years experience to its credit before it gets into your service. You'll find how experience counts when you regulate with C-F equipment.
The Chaplin-Fulton Mfg. Co.

REPRESSURING GREATLY INCREASES OIL PRODUCTION IN WILLIAMS POOL

The details of how production of oil in the Williams Pool, in Callahan County, Texas, has been greatly increased by the application of air repressuring methods are outlined in an engineering report just made public by the United States Bureau of Mines. The Williams Pool, with 61 producing wells and 9 input pressure wells, showed an estimated gain in production over what has been expected from normal production of 33 per cent under repressuring methods during 1927, 78 per cent in 1928, and 76 per cent in 1929. The initial production of wells in this pool ranged from less than 4 to 35 bbls., with a daily average of 12 bbls. The estimated net increase for the field over the three and one-half-year period is 57,500 bbls., or 44 per cent.

The Williams Pool is one of a number of shallow pools in the lenticular sands of the Cisco series in the Putnam-Moran district. The outstanding features of the pool are the abrupt variation in sand conditions, the absence of pronounced edge-water encroachment, the irregular oil-water contact, and the "low-head" and "small-volume" water that occurs apparently in the base of the sand in the "lows" of areas of depression.

Conclusions Reached

The following conclusions of the author of the report, H. B. Hill, are based upon a detailed study of repressuring operations in the Williams Pool. Other shallow pools in the Putnam-Moran district have many similar features and characteristics. Correlative data on these pools were gathered during the study made by the Bureau of Mines and are recorded briefly in an appendix to this report.

Old development records are sometimes inadequate or unreliable, and it is often advisable to drill five-spot wells and core the sand to ascertain subsurface conditions and to obtain other data regarding drainage, porosity, saturation, fluid levels, reservoir pressure, and water conditions. Five-spot wells were drilled for this purpose in the Williams Pool and cased to make them input pressure wells. This procedure gave satisfactory results.

The practice of coring with cable-tool equipment has been adopted by several of the companies. Coring has supplied data that can be used to interpret more accurately the character of the producing sands and has facilitated the application of proper development methods and production practices, including restoration measures.

The gravity of the oil in the Williams Pool was lower from the beginning of production than that of oil from wells in the surrounding pools. The use of air in this pool has lowered the gravity from 33.3° to 31.8° A.P.I. during approximately 18 months.

The average gasoline content of the air-gas mixture taken at the casinghead of four wells in the Williams Pool during November, 1927, was 1.1 gallons per 1,000 cubic feet. Fifteen samples collected later from representative wells in the different pools in the district that were also under repressuring operations showed an average gasoline content of 0.796 gallon per 1,000 cubic feet. Before application of air very little, if any, gas was produced at the casingheads.

Gas-Oil Ratios

The gas-oil ratios during the flush periods in the shallow pools of the district are usually small, and when repressuring commenced these ratios were probably below 500 cubic feet per barrel of oil.

Methods of repressuring that favor the maintenance of a low gas-oil ratio (approximately 1,000 cubic feet or less per barrel of oil) are desirable and aid in conserving the repressuring medium by preventing by-passing.

The use of air for repressuring or the circulation of an air-gas mixture of high air content aggravates corrosive action. Brass and bronze working parts are now generally used in the pumping equipment in the pools of this district wherever possible.

Gas, when available, is probably a better repressuring medium, because it is more soluble in oil and its corrosive action is less. The recycling of casinghead vapors with gas for make-up purposes has given satisfactory results on a number of properties in the district. The use of all vapors produced with the oil is a conservation measure and tends to prevent loss in the gravity of the oil.

During the early development of the shallow pools some wells were completed to produce from one or more sand lenses, and a considerable depth of open formation was left in the bottom of the hole. In other wells pockets were drilled below the pay. Although these methods of completing wells may not appear detrimental to production when a well is completed, later they may constitute a hazard, especially under repressuring operations. The best practice requires close isolation of the pay sand. If there is a barren formation or water zone below the producing sand the hole should be plugged back to the bottom of the pay, or if a barren formation or gas sand occurs above the pay the wells should be properly cased before repressuring is begun.

Sand Conditions

The sand conditions in several of the shallow pools under observation were as follows: Free gas occurred in the upper part of the zone, and below this zone in sand probably 6 to 10 feet thick the best pay was found. A low-head small-volume water was encountered in the base of the sand over parts of the pools. At relatively low pressures the repressuring medium passed more freely through the depleted gas sand than through the oil sand or the less-saturated parts of the water sand. This condition may be helped or partly overcome by shutting in the wells or maintaining a high fluid level.

Restoration of pressure in the producing zone tends to retard encroachment of water, especially in the lenticular sand areas of low-head small-volume waters.

The presence of small volumes of gas in the shallow pools of this district suggests that low initial production is caused by lack of enough expelling force in the reservoir sand to move appreciable amounts of oil into the hole. Repressuring methods offer a logical means of supplying the additional energy necessary for the higher recovery. The gravity and viscosity of the oil, the amount of gas in solution, the permeability and porosity of the sand, and the character of the sand reservoir influence the results and largely determine the most suitable operating plan.

Uniform distribution and spread of the repressuring medium are advisable but are generally difficult to obtain, especially where there are several operating units. Leases in some of the pools have therefore been consolidated, a condition that permits greater freedom in choosing a plan of operation. Co-operative development, involving uniform practices, has given satisfactory results.

By-passing is controlled by regulating the input volume, holding back pressure at the casinghead of the producing wells, adjusting the rate and stroke in pumping equipment, raising tubing, and properly timing the intermittent pumping and rest periods.

Input Wells

The selection of input wells in the Williams and adjacent pools to give greatest recovery probably depends more upon the number of producing wells that may be affected by air injection than upon the following factors: The position of the wells on the structure, the distance of the input well from lease boundary lines, the mechanical conditions of the wells, and the past production history of the wells. In these shallow pools the average ratio is one input well to six producing wells.

The pressures necessary to deliver a given volume of air or gas to the sand

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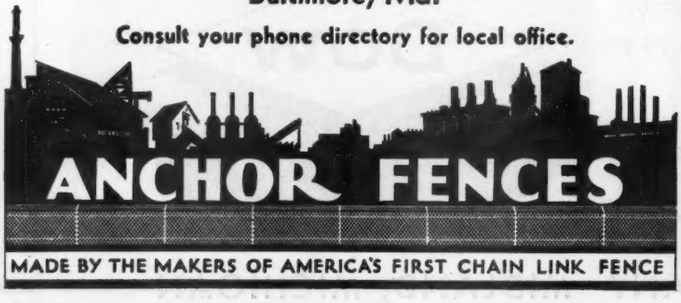

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in the pressure wells of a pool and in various pools vary considerably. In this district approximately 20,000 to 30,000 feet of gas is delivered to the sand through each key well daily at whatever pressure is needed to inject this amount into the producing formation. Forcing the daily production by high-power injection methods increases by-passing and is detrimental to uniform distribution and spread of the repressuring medium. A gradual increase in production over a long period of time under repressuring practices is believed to be desirable and will result in a higher ultimate recovery.

Attention is called to the importance of accurate observations and records of production data, including input and output air-gas volumes and pressures, and to the necessity of installing proper equipment and recording devices for obtaining these data.

Experimental tests at the individual wells with portable compressors offer a practical method of obtaining pressure-volume data for planning permanent installations.

Sands in the Cisco series in several shallow pools in this district have been successfully repressured. Three of the larger pools for which figures are available and on which air was applied during 1926 showed gains in production of 300,286, and 118 per cent for the year 1927. The average daily production per well for the month prior to repressuring in the three pools was 1.2, 1.3 and 2.9 bbls., respectively.

CENTRAL WEST FIELDS

(Continued from Page 60)

is expecting to make a new location near its test on the Spayd farm. The No. 2 Adolph Grass, drilled by Theodore Seitz, has been cemented and will be put on the pump soon. Charles Dice is down 400 feet in the John Huffman test in Section 7, near Huffman Mills. Two wells in the Gentryville Pool have been cleaned out and are producing. It is likely more drilling will be done there.

Sullivan County—The test well on the Alva Marts farm, 4 miles west of Shelburn, is down 1,510 feet, where it struck a gas volume estimated at 1,000,000 feet. This is being drilled by Wyman & Brown for Morris Yeager and others. This will probably be drilled to the Niagara. Harry Adkins is drilling a test for Thomas & Ellis on the Bert Wood farm, 2½ miles west of Farmersburg. The No. 4 Elmore Williams, drilled in Section 5, Fairbanks Township, by the Twin Creek Oil Co., is making 60 bbls. at a total depth of 2,225 feet.

Vigo County—The Ohio Oil Co. completed its No. 2 Cash Piety, NE, Section 32, Prairie Creek Township, at 2,181 feet. Initial production was 25 bbls. Hamill & Dill deepened their well on the Ross Prevo farm nearby, where they increased their production materially.

ILLINOIS

Only two completions were reported from the Illinois fields, both very light pumpers. The Niagara Oil Corp. drilled in No. 12 in the northwest corner of the J. G. Apple farm, SW, Section 8, Oblong Township, Crawford County, which produced but 2 bbls.

West of the old Casey Field in Union Township, Cumberland County, Paul J. Campbell drilled No. 3, 650 feet from the north line and 155 feet from the east line of the George Kuhn farm, SW, Section 11, which produced but about a barrel. From 1907-12 a great number of shallow wells were drilled in this township, which was among the best shallow fields in the old development in the eastern part of the State. Many wells that showed initial production of 500 bbls. or better were brought in and it was a lively spot as wells could be rigged and completed within less than a week. It was in a way equal to the famous shallow Casey Field that extended from Casey north to Westfield and known as Parker Prairie. The well that opened the great shallow Casey Field was drilled by Hoblitzel, and a few years later the same area where the Kentucky wells were pulled out developed a wonderful shallow producing field that made history in Kentucky.

KENTUCKY-TENNESSEE

(Continued from Page 62)

This is believed to be the largest number operated by any one interest in the field.

Daviess County Wells

In Daviess County a few very nice producers have been brought in. Doctor Sirman, Pennsylvania operator, drilled deeper his No. 1 on the Atherton farm in the Red Hill Field and it flowed 102 bbls. and is said to be holding around 100 bbls. a day since. No. 2 same farm is reported showing around 70 bbls.

Hupp, Duff and others' No. 4 on the Widow Noel farm, in the Maxwell Pool, is reported good for an initial of 60 bbls. H. C. Smith Co.'s No. 2, 800 feet from the south line and 200 feet from the west line of the Robert Simmins farm, in the Jones Pool, shows for 10 bbls. under pump.

Johnson Oil & Refining Co. drilled a dry hole 800 feet from the north line and 200 feet from the east line of the H. W. Foster farm, near Habit. Eastern Gulf Oil Co.'s test, 600 feet from the north line and 200 feet from the east line of the Will Christian farm, in the Jones Pool, is a 20-bbl. initial pumper. Hupp, Duff & McMahan's Nos. 4 and 5 on the W. G. Hayden No. 2 farm, in the Maxwell Pool, are rated good for 75 bbls. initial each.

McLean County Wells

In the Gridstone Hill Pool in McLean County, Cameron & Thompson's No. 1 G. B. McManama farm of 150 acres is reported doing 65 bbls. initial from a depth of 1,101 feet.

Henderson County Wells

In the Niagara Field of Henderson County, the Niagara Oil & Gas Co.'s No. 1 Minnie Robards farm was good for 4 bbls. the first 24 hours. Same company's No. 2 on the Joe Slavey farm is a gas well, as is No. 3, same farm, which showed a volume of 780,000 feet.

Wood Oil Co. drilled a dry hole on the Hamilton heirs farm, same pool, and Fred Esslinger and others' test on the Charles Branson farm, same pool, was dry. Esslinger is from Gibsonburg, Sandusky County, Ohio, where he operated many years ago. For the past few years he has been operating in the Glasgow Field of Barren County, Kentucky, where he opened a rich shallow area known as the Lecta Pool.

Barren County Wells

In the Glasgow Field of Barren County, J. W. Porter's No. 3 on the Mayfield heirs farm produced 3 bbls. from the Yellow Cap sand at 530 feet. His No. 5 George Mayfield farm produced but 1 bbl. initial from 553 feet.

Joe Leach & Son's test on the Tom Pace farm in the Lecta Pool was dry. H. R. Norris and others also found a dry hole on the Frank Richardson farm in the Oskamp Pool.

Missouri-Kansas Pipe Line Co. reports a good gas well in the vicinity of Glasgow Junction, same county.

Star Oil & Gas Co. failed to find anything of worth in the shallow sand on the Ritchie farm in the Emery Pool and will go to 2,000 feet.

Cumberland County

B. H. Allen drilled a dry hole on the Hasting farm in Cumberland County. Wilcox Brothers reported drilling at 465 feet at a test at the head of Clover Creek. Smith & Smith are drilling on the Lena Keen farm on Bear Creek, same county.

In Clinton County, Smith & Smith are drilling around 918 feet near the hamlet of Hobart, in the southwestern part of the county, not far north of the Kentucky-Tennessee State line.

Field Pick-Ups

James C. Ellis and others are drilling No. 6 on the E. Perry Talley farm in the Deanfield Pool of Ohio County.

Late advice is that McDonald & Ford have an excellent gas showing on the Bee Vogels farm in the Pellville area of Hancock County.

Louisville Gas & Electric Co. is due to complete No. 9 on the R. A. Miller 175 acres in the Haynesville section of Ohio County.

Loman, Daley and others' No. 5 James B. McGovern farm in the Pellville Field of Hancock County is dry in the Jett and going deeper.

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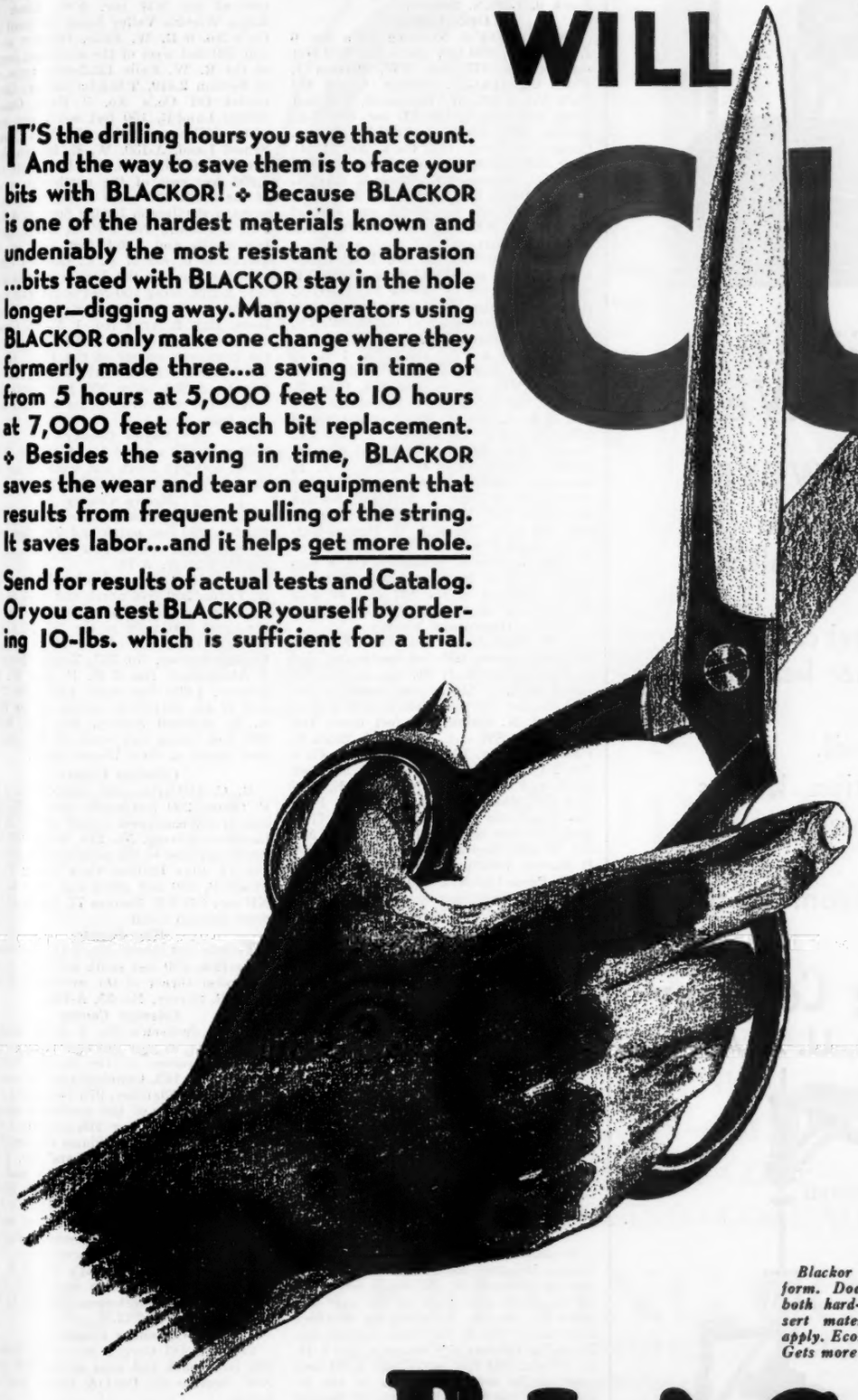

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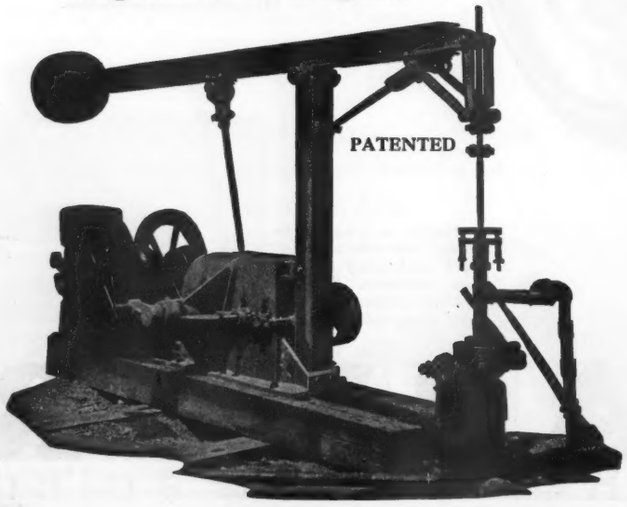

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Week Ending July 9

Carson County

Stubblefield and others' No. 2 E. Cooper (Shell), 330 feet south and 990 feet west of the NE cor. SE, Section 5, Block 9, I.&G.N. Survey.

Gray County

Danciger Oil & Refining Co.'s No. 6 J. S. Morse, 990 feet north and 330 feet east of the SW cor. NW, Section 1, Block 26, H.&G.N. Survey. Camel Oil Co.'s No. 5 W. W. Harrah-B, 330 feet north and west of the SE cor. SW NE, Section 150, Block 3, I.&G.N. Survey. Cockrell-McElroy Oil Co.'s No. 1 C. Baer, 330 feet north and east of the SW cor. NE, Section 126, Block 3, I.&G.N. Survey. Dixon Creek Oil Co.'s No. 4 W. W. Harrah, 330 feet north and east of the SW cor. SE NE, Section 150, Block 3, I.&G.N. Survey.

Smith & McDaniels' No. 1 A. Chapman, 990 feet south and west of the NE cor. SW, Section 52, Block 25, H.&G.N. Survey. Danciger Oil & Refining Co.'s No. 2 C. W. Bradford, at the C SW NE, Section 148, Block B-2, H. &G.N. Survey. Empire Gas & Fuel Co.'s No. 1 R. J. Sailor, 330 feet north and east of the SW cor. NW NE, Section 138, Block 3, I.&G.N. Survey. Magnolia Petroleum Co.'s No. 1 R. J. Sailor, 990 feet north and 330 feet east of the SW cor. E half NE, Section 138, Block 3, I.&G.N. Survey. Midwest Exploration Co.'s No. 2 J. B. Bowers-A, 990 feet south and 330 feet west of the NE cor. W half SW, Section 63, Block B-2, H.&G.N. Survey. Operators Oil Co.'s No. 3 J. B. Bowers-Texmore, at the C SW SE, Section 85, Block 3, I.&G.N. Survey. Shamrock Oil & Gas Co.'s No. 1 J. M. Saunders-B, 330 feet north and east of the SW cor. W half SW, Section 41, Block 3, I.&G.N. Survey.

Hutchinson County

Gulf Production Co.'s No. 47 C. L. Dial and others, 660 feet north and east of the most southerly SE cor., Section 34, Block M-23, T.C.R.R., and located in Alfred Benton Survey. Holmes and others' No. 3 J. K. Quinn, 330 feet north and east of the SW cor., Section 7, Block 9, I.&G.N. Survey. Phillips Petroleum Co.'s No. 2 C. R. Garner and others, 990 feet south and west of the NE cor. SE, Section 123, Block 4, I.&G.N. Survey. Phillips Petroleum Co.'s No. 1 W. E. Herring, 330 feet south and west of the NE cor. W half, Section 7, Block X02, H.&O. B. Survey. Phillips Petroleum Co.'s No. 1 L. C. Pease-Childers, 330 feet north and west of the southeast corner of the Z. C. Collier Survey No. 9½.

Wheeler County

Murchison & Fain's No. 1 I. Close, at the C SE NW, Section 83, Block 23, H. &G.N. Survey. Murchison & Fain's No. 2 J. D. Purcell, at the C SW NW, Section 50, Block 17, H.&G.N. Survey.

Magnolia Petroleum Co.'s No. 2 J. A. Worley, 330 feet south and east of the NW cor. NE, Section 39, Block 24, H.& G.N. Survey. Murchison & Fain's No. 1 Magnolia Petroleum Co., at the C SE NE, Section 54, Block 23, H.&G.N. Survey. Woodley and others' No. 1 Sloss & Admire, 660 feet south and 330 feet west of the NE cor., Section 47, Block 13, H.&G. N. Survey.

NORTH CENTRAL AND WEST TEXAS

Week Ending July 9

Archer County

Barnsdall Oil Co.'s No. 1 B. T. McCarty, 150 feet south and west of the northeast corner of the south 100 acres of the north 200 acres of the east 400 acres of the B. T. McCarty 640-acre tract out of the R. Chisholm Survey, No. 20, A-71. Golding & Cochran's No. 8 H. E. Brown, 600 feet north and 2,794 feet west of the southeast corner of the H. E. Brown 184.8-acre tract out of Section 6, B.B.B.&C. Survey, A-826. J. H. Massie's No. 3 Lloyd Echols, 450 feet south and 750 feet west of the northeast corner of the north 40 acres of the L. Echols 124.5-acre tract out of Section 2,418, T.E.&L. Survey. G. L. Pace's No. 2 Charles S. Arnold, 200 feet north and 150 feet west of the southeast corner of the west 100 acres of the south 200 acres of the C. S. Arnold 400-acre tract out of the Joseph Levins Survey, A-259.

Shappell Oil Co.'s No. 2 Kemp & Kempner-E, 508 feet south and 150 feet east of the NW cor. NW, Block 76, Kemp Wichita Valley Land. Bridwell Oil Co.'s No. 6 R. W. Fails, 150 feet north and 750 feet west of the southeast corner of the R. W. Fails 122.5-acre tract out of Section 2,419, T.E.&L. Survey. Continental Oil Co.'s No. 3 Falls County School Land-B, 150 feet south and west of the NE cor., Section 15, Falls County School Land, A-130. W. E. Maxon, Jr.'s No. 6 F. C. Green-B, 150 feet south and 1,450 feet east of the northwest corner of the south 320 acres of the west 587.5 acres of the Joseph Levins Survey, A-259. Pois & Schultz' No. 1 F. C. Green, 3,000 feet south and 1,684 feet east of the northwest corner of F. C. Green's 1,290-acre tract out of the Joseph Levins Survey, A-259, being 150 feet south and west of the northeast corner of their 40-acre lease. Ray & Art's No. 1 F. C. Green, 1,944 feet south and 3,819 feet east of the northwest corner of the F. C. Green 1,290-acre tract out of the Joseph Levins Survey, A-259, being 150 feet south and east of the northwest corner of their 160-acre lease.

Baylor County

Turner and others' No. 1 W. H. Portwood, 450 feet north and west of the SE cor., Section 3,140, T.E.&L. Survey.

Brown County

Eppenauer Drilling Co.'s No. 1 A. B. Shields, 150 feet south and 741 feet east of the northwest corner of the J. C. Brown Survey, A-74.

R. C. McCarter and others' No. 2 W. N. Favor, 200 feet north and east of the southwest corner of the east 50 acres of the south 100 acres of the W. N. Favor 200-acre tract out of the Hrs. William English Survey, No. 791. Young Brothers & Alexander's No. 3 E. P. and W. H. Kilgore, 1,000 feet south and 2,350 feet east of the northwest corner of the Hrs. N. B. Mitchell Survey, No. 153, being 150 feet north and west of the southeast corner of their 75-acre lease.

Callahan County

R. C. McCarter and others' No. 2 R. P. Odom, 200 feet north and 1,900 feet east of the southwest corner of the P. H. Cammons Survey, No. 214, being 200 feet north and east of the southwest corner of Lot 12. Star Drilling Co.'s No. 2 E. L. Finely-B, 150 feet south and west of the NE cor. SE NE, Section 77, Bayland Orphan Asylum Land.

Clay County

Temple and others' No. 1 H. C. Edrington estate, 150 feet south and east of the northwest corner of the southeast of the H.T.&B. Survey, No. 35, A-759.

Coleman County

W. J. Jackson's No. 1 J. T. Audas, 150 feet north and 750 feet west of the southeast corner of the E. M. Justice Survey, No. 165. Cunningham and others' No. 1 W. McClatchey, 975 feet south and 1,770 feet west of the northeast corner of the W. McClatchey 260-acre tract out of the McKinney & Williams Survey, No. 90. J. E. Harrell and others' No. 1 C. V. Evans, 660 feet north and east of the SW cor. SW NE, Section 26, Block 1, G.H.&H. Survey. Lloyd Oil Corp.'s No. 13 R. G. Bartholomew, 2,550 feet north and 150 feet east of the southwest corner of the W. Farris Survey, No. 279.

Mitchell & Groves Unit's No. 1 J. P. Morris, 2,637 feet north and 1,511 feet east of the southwest corner of the C. M. Mann Survey, No. 72.

Comanche County

Corvette Oil Corp.'s No. 4 L. Poteet, 450 feet south and west of the NE cor. NW, Section 45, Deaf & Dumb Asylum Land.

J. E. Whiteside's No. 1 E. A. Whitesides, 330 feet north and 660 feet west of the SE cor., Section 38, Deaf & Dumb Asylum Land.

Cooke County

Fain-McGaha Oil Corp.'s No. 2 A. A. Otto, 750 feet south and 150 feet east

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of the northwest corner of the W. C. Davis Survey, A-308. United Production Co. and others' No. 1 A. J. Dennis-E, 2,438 feet north and 844 feet east of the southwest corner of the L. Raney Survey, A-1,682, being 450 feet south and 150 feet east of the northwest corner of its 80-acre lease.

Crane County

Gulf Production Co.'s No. 79 J. T. McElroy, 330 feet north and east of the SW cor., Section 200, Block F, C.C.S.D. &R.G.N.G.R.R. Survey.

Crockett County

McMan Oil & Gas Co. and Amerada Petroleum Corp.'s No. 2 L. P. Powell, 258 feet north and 2,349 feet west of the NE cor., Section 42, T.C.R.R., and located in Section 52, Block BB, G.C.&S.F. Survey.

Denton County

Lloyd Oil Corp. and others' No. 1 Mrs. J. M. Gracie, 2,490 feet north and 2,790 feet east of the southwest corner of the J. Amason Survey, A-26.

Eastland County

Belva Oil Co.'s No. 1 F. Good-A, at the C NE, Section 56, B.B.B.&C. Survey. McLester Oil Co. and others' No. 1 H. Exall, 200 feet north and 660 feet west of the SE cor. NE, Section 55, Block 4, H.&T.C. Survey. Rover Drilling Co.'s No. 2 B. F. Chastain and others, 450 feet north and 1,750 feet east of the SW cor. SW, Section 52, Block 4, H.& T.C. Survey.

Texas Pacific Coal & Oil Co.'s No. 1 Mrs. F. W. Allen-C, 3,600 feet south and 4,100 feet west of the northeast corner of the M. J. Robinson Survey No. 1.

Ector County

Amerada Petroleum Corp. and others' No. 3 University-B, 990 feet north and 1,320 feet west of the SE cor., Section 2, Block 35, University Land. Cosden Oil Co.'s No. 5 University-B, 2,310 feet south and 2,200 feet west of the NE cor., Section 2, Block 35, University Land. Skelly Oil Co. and others' No. 1 University-C, 2,310 feet south and 2,200 feet east of the NW cor., Section 2, Block 35, University Land.

Gulf Production Co.'s No. 2 W. E. Connell-B, 330 feet south and 440 feet west of the NE cor., Section 1, Block B-16, Public School Land. Same company's No. 4 State, 330 feet north and 3,108 feet west of the southeast corner of the south 160 acres of Section 1, Block 35, University Land. Same company's No. 5 State-A, 330 feet south and 3,120 feet west of the NE cor. N half S half, Section 2, Block 35, University Land. Humble Oil & Refining Co. and others' No. 10 Kloh & Rumsey-D, 1,695 feet north and 1,320 feet east of the SW cor., Section 7, Block 44, Township 3s, T.&P. Survey. Humble Oil & Refining Co.'s No. 10 R. L. York, 1,646 feet south and 1,320 feet east of the NW cor., Section 16, Block 44, Township 3s, T.&P. Survey. Landreth Production Corp.'s No. 5 University-S, 330 feet south and 2,200 feet east of the NW cor., Section 2, Block 35, University Land.

Erath County

G. W. McCamey and others' No. 1 R. L. Pair, 700 feet northeast of the southwest line and 500 feet southeast of the northwest line of the J. E. Arthur Survey, A-1,003.

Grayson County

C. E. Marshall and others' No. 1 J. L. Taylor, 1,314 feet south and 3,411 feet west of the northeast corner of the J. Butler Survey, A-117. Franklin Smith Oil Co.'s No. 1 Emma R. O'Neal, 450 feet north and 150 feet east of the southwest corner of the Emma R. O'Neal 282-acre tract out of the John Aitkin Survey, A-11. Hickey & McGee's No. 1 Will Boston, 2,450 feet north and 150 feet east of the southwest corner of the J. Morrison Survey, A-793, being 150 feet north and east of the southwest corner of the Will Boston 80-acre tract.

Hudspeth County

Rio Bravo Oil Co.'s No. 1 Southern Pacific Railroad right of way, 1,800 feet south and 1,000 feet west of the NE cor., Section 16, Block 72, Township 7, T.&P. Survey, and located on the Southern Pacific Railroad right of way.

Irion County

C. Cromwell and others' No. 2 F. Tankersley, 200 feet south and 150 feet east of the NW cor., Section 1,219, T.C. R.R. Survey.

Jack County

Atlantic Oil Production Co.'s No. 1 O. Thomason, 2,345 feet north and 175 feet east of the southwest corner of the George Hardesty Survey, A-294.

Loving County

California Co.'s No. 3 Reagan & McElvain and others, 880 feet southeast of the northwest line and 440 feet northeast of the southwest line of Section 84, Block 1, W.&N.W.R.R. Survey. Same company's No. 4 Reagan & McElvain and others, 330 feet southwest of the northeast line and 1,650 feet southeast of the northwest line of Section 84, Block 1, W.&N.W.R.R. Survey. L. E. Lockhart's No. 2 Wheat & Ramsey, 440 feet southwest of the northeast line and 880 feet southeast of the northwest line of Section 83, Block 1, W.&N.W.R.R. Survey. L. O. White and others' No. 1 G. B. Russell and others, 320 feet southeast of the northwest line and 2,200 feet northeast of the southwest line of Section 80, Block 1, W.&N.W.R.R. Survey.

Montague County

Bridwell Oil and Continental Oil Co.'s No. 3 J. H. Brown, 750 feet north and 1,107 feet west of the southeast corner of the R. Graves Survey, A-293.

Palo Pinto County

Gordon & Gholson's No. 2 C. V. McDonald, 2,750 feet south and 400 feet east of the NW cor., Section 38, Block 1, T. &P. Survey.

McLester Oil Co.'s No. 2 A. P. Wilbar, 2,200 feet south and 1,900 feet west of the northeast corner of the James Latham Survey, A-279. (This well was completed June 17, 1930, as dry and abandoned; total depth 1,730 feet.)

Pecos County

Barnes and others' No. 1 W. A. Sanford, 160 feet southeast of the northwest line and 157 feet northeast of the southwest line of Section 55, Block 10, H.&G. N. Survey. Black-Doran & McGee's No. 1 Pecos Valley Oil Co., 1,120 feet northwest of the southeast line and 1,420 feet northeast of the southwest line of Section 34, Block 3, H.&T.C. Survey. R. D. Webb's No. 3 R. D. Webb, 223 feet north and 1,900 feet east of the most westerly SW cor., Section 105, Block OW, G.C.&S.F. Survey.

Galt Brown's No. 1 J. L. Neville, 764 feet north and 2,265 feet west of the most easterly SE cor., Section 74, Block 194, G.C.&S.F. Survey. California Co.'s No. 11 Smith, Lease 1, Section 23, 991 feet south and 327 feet east of the NW cor., Section 23, Block 194, G.C.&S.F. Survey. Dixie Oil Co.'s No. 3 J. H. Tippett, 150 feet south and 680 feet west of the SE cor., Section 539, Arnold & Barrett Survey, A-3, and located in Section 61, Block 194, G.C.&S.F. Survey. Independent Oil & Gas Co. and others' No. 4 J. A. McDonald, 155 feet south and 2,485 feet west of the NE cor., Section 46, Block 12, H.&G.N. Survey. Gulf Production Co.'s No. 33 Yates, 900 feet north and 2,640 feet east of the southwest corner of the Runnels County School Land, Survey A-2,169. Same company's No. 26 M. A. Smith and others, trustee-B, 990 feet south and 2,770 feet west of the NE cor., Section 28, Block 194, G.C.&S.F. Survey.

Reeves County

Salsbury & Gregory's No. 1 Y. Bell, 1,170 feet south and 330 feet west of the NE cor., Section 7, Block 5, H.&G.N. Survey.

Scurry County

Camp Springs Oil & Refining Co.'s No. 1 Strayhorn, 330 feet north and 1,980 feet east of the SW cor., Section 154, Block 3, H.&G.N. Survey.

Shackelford County

S. S. Kouri and others' No. 1 Bouldin, at the C SW SE, Section 10, Block 3, H.&T.C. Survey. Magnolia Petroleum Co.'s No. 1 L. G. Gorsuch, 150 feet south and east of the NW cor., Section 82, Block 13, T.&P. Survey. Charles Smalley's No. 1 F. W. Alexander, 1,084 feet northwest of the southeast line and 150 feet northeast of the southwest line of Section 577, T.E.&L. Survey.

F. W. Holder and others' No. 1 Compton Brothers, 150 feet north and east of the SW cor., Section 5, Blind Asylum Land. Sedwick & Webb's No. 1 E. A.

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Jeter, 150 feet south and west of the NE cor. W half of SE, Section 15, Block 11, T.&P. Survey.

Sterling County

B. C. Mann and others' No. 1 Reed, 330 feet south and 2,310 feet east of the NW cor., Section 16, Block 14, S.P.R.R. Survey.

Stephens County

Texas Consolidated Oil Co.'s No. 1 B. S. Walker-B, 330 feet north and east of the SW cor. SE, Section 1,322, T.E.&L. Survey. A. J. Brown and others' No. 7 S. J. Riddle, 2,200 feet south and 1,320 feet east of the NW cor., Section 67, Block 4, T.&P. Survey.

Throckmorton County

Brihill-Grisham and others' No. 1 T. S. Richards, 150 feet north and east of the southwest corner of Lot 16, Andrew J. Morgan Survey, A-226.

York and others' No. 1 Kate Brockman, 276 feet south and 1,876 feet east of the NW cor., Section 2,365, T.E.&L. Survey.

Ward County

The California Co. and Atlantic Oil Producing Co.'s No. 1 E. W. Thomas, 990 feet southeast of the northwest line and 990 feet northeast of the southwest line of Section 31, Block 34, H.&T.C. Survey. Gulf Production Co.'s No. 5 Hutchings Stock Association's Tract C, 330 feet north and east of the SW cor., Section 3, Block f, G.&M.M.B.&A. Survey.

Wichita County

Arkansas Fuel Oil Co.'s No. 36 Kemp & Kempner-A, 900 feet south and 750 feet west of the SE cor., Block 81, Kemp Wichita Valley Land and located in Block 82. Same company's No. 37 Kemp & Kempner-A, 900 feet south and 1,160 feet west of the SE cor., Block 81, Kemp Wichita Valley Land, and located in Block 82.

Bridwell Oil Co. and others' No. 2 Mrs. Lena Sparks, 750 feet south and 800 feet east of the northwest corner of the Mrs. L. Sparks 105.4-acre tract out of the C. T.R.R. Survey, No. 1, A-51. R. R. Clark and others' No. 4 W. P. and J. F. Bickley, 1,050 feet south and 150 feet west of the NE cor., Section 2, C.&M. Survey, A-594. Walton & Blair's No. 3 W. B. Honaker, 750 feet south and 150 feet east of the NW cor., Section 1, C.&M. Survey, A-379.

Winkler County

Atlantic Oil Production Co. and Maxwell's No. 1 L. Daugherty, 1,650 feet north and 2,310 feet west of the SE cor., Section 16, Block 74, School Land.

Wilbarger County

Barkley & Meadow's No. 13 W. T. Waggoner-C, 266 feet north and 706 feet east of the SW cor., Section 5, Block 5, H.&T.C. Survey. Gray Back Development Co.'s No. 5 W. T. Waggoner (Smith), 450 feet north and 150 feet west of the SE cor., Section 50, Block 2, H.&T.C. Survey. McCarty Oil Co.'s No. 2 W. T. Waggoner, 150 feet north and 400 feet east of the SW cor. NW, Section 37, Block 4, H.&T.C. Survey. Rancho Oil Co.'s No. 10 Waggoner-A, 3,450 feet south and 845 feet west of the NE cor., Section 10, Block 4, H.&T.C. Survey. Simms Petroleum Co.'s No. 2 J. P. Ayers, 1,383 feet south and 1,050 feet east of the NW cor., Section 8, Block 5, H.&T. C. Survey. Staley-Wynne & Co.'s No. 4 W. T. Waggoner-R, 205 feet south and 280 feet east of the NW cor. SE NE, Section 26, Block 4, H.&T.C. Survey. Zenith Oil Co.'s No. 4 M. J. George, 150 feet south and 2,016 feet west of the SE cor., Section 82, Block 14, H.&T.C. Survey, and located in the J. Poitevent Survey, No. 29.

Young County

W. S. Brazelton and others' No. 4 J. F. Larimore, 450 feet north and 150 feet west of the SE cor. E half NE, Section 2,246, T.E.&L. Survey. Same company's No. 5 Larimore, 150 feet north and east of the SW cor. E half NE, Section 2,246, T.E.&L. Survey. G. B. Chandler's No. 1 J. D. Carpenter, 650 feet south and 700 feet east of the NW cor., Section 237, T. E.&L. Survey, being 150 feet north and 450 feet west of the southeast corner of his 25-acre lease. Goldsmith & Hamilton's No. 1 J. Smith, 300 feet south and 150 feet west of the NE cor., Section 82, T. E.&L. Survey. C. H. Hebrig's No. 1 E. F. Farrow, 150 feet north and east of

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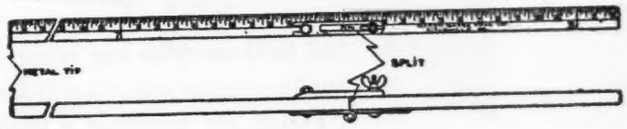

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the SW cor. W half NE, Section 1,369, T.E.&L. Survey. Hunter Oil Corp.'s No. 4 J. M. Bloodworth-A, 150 feet north and 810 feet west of the southeast corner of its 35-acre lease "A," out of Section 157, T.E.&L. Survey. Independent Oil & Gas Co.'s No. 5 J. F. Larimore, 777 feet north and 150 feet west of the SE cor., Section 2,246, T.E.&L. Survey. Same company's No. 7 Larimore, 150 feet south and 778 feet west of the NE cor. S half, Section 2,246, T.E.&L. Survey. Same company's No. 8 Larimore, 150 feet south and 1,902 feet west of the NE cor. S half, Section 2,246, T.E.&L. Survey. Same company's No. 9 Larimore, 464 feet north and 1,082 feet west of the SE cor., Section 2,246, T.E.&L. Survey. Same company's No. 10 Larimore, 150 feet south and 464 feet west of the NE cor. S half, Section 2,246, T.E.&L. Survey.

Junker & Perkin's No. 1 W. Sloan, 150 feet south and east of the northwest corner of the east 40 acres of the SW, Section 232, T.E.&L. Survey. Panhandle Refining Co.'s No. 4 B. H. Larimore and others, 150 feet south and 450 feet east of the northwest corner of the east 40 acres of the SW, Section 2,247, T.E.&L. Survey. Reno Oil Co.'s No. 1 W. G. Meaders, 150 feet north and east of the SW cor. NW, Section 216, T.E.&L. Survey. E. R. Riggs' No. 11 B. H. Larimore and others, 450 feet north and 150 feet east of the SW cor. W half SW, Section 2,247, T.E.&L. Survey. E. R. Riggs' No. 12 B. H. Larimore and others, 780 feet south and 150 feet east of the NW cor. W half SW, Section 2,247, T.E.&L. Survey. E. R. Riggs' No. 13 Larimore and others, 764 feet north and 150 feet east of the SW cor. W half SW, Section 2,247, T.E.&L. Survey. O. H. Simpson and others' No. 2 B. H. Larimore and others, 150 feet north and 450 feet east of the SW cor. N half NW, Section 2,-247, T.E.&L. Survey. Slick-Pitzer & West's No. 1 W. W. Williamson, 990 feet south and 950 feet east of the NW cor., Section 459, T.E.&L. Survey. Westheimer & Daube's No. 8 B. H. Larimore and others, 150 feet south and 450 feet east of the NW cor. S half NW, Section 2,247, T.E.&L. Survey. Wootten & Reed's No. 3 Fisher, 947 feet north and 450 feet east of the southwest corner of Mrs. A. J. Fisher's 57-acre tract out of the H. H. Lemmons Survey, A-1,477. Young Brothers & Alexander's No. 1 B. H. Larimore, 150 feet north and 516 feet east of the SW cor. S half, Section 2,244, T.E.&L. Survey.

Brazelton and others' No. 6 J. F. Larimore, 150 feet north and 464 feet west of the SE cor. E half NE, Section 2,246, T.E.&L. Survey. Campbell Oil Corp.'s No. 1 J. L. Hawkins, 900 feet north and 150 feet west of the southeast corner of the J. L. Hawkins 250-acre tract out of the I. Helman Survey, A-130. Consolidated Oil Co.'s No. 1 O. Dietrich, 150 feet north and west of the southeast corner of the north 37.5 acres of the south 75 acres of the O. Deitrich 150-acre tract out of the G. W. Stell Survey, A-256. Cooper & Hamilton's No. 2 J. H. Crain, 750 feet south and 1,050 feet east of the NW cor., Section 169, T.E.&L. Survey. Elliott & Kliner's No. 1 I. M. Kirkland, 150 feet north and west of the southeast corner of the north 30 acres of the NW, Section 2,250, T.E.&L. Survey. R. H. Helm's No. 1 B. W. Drum, 450 feet north and 150 feet west of the SE cor., Section 603, T.E.&L. Survey. C. W. Josey and others' No. 1 W. W. Farmer, 150 feet south and west of the NE cor. NE NE, Section 1,Gal. Br. & Nav. Co. Survey, A-1,305. King Royalty Co. and Heydrick's No. 7 J. B. Daniel, 150 feet south and 450 feet east of the NW cor. S half SE, Section 164, T.E.&L. Survey. King Royalty Co. and Bullington's No. 3 J. and C. Graham, 150 feet south and 750 feet west of the northeast corner of the north 40 acres of the J. and C. Graham 200-acre tract out of Section 2,249, T.E.&L. Survey.

King Royalty Co. and Bullington's No. 4 J. and C. Graham, 150 feet south and 1,050 feet west of the northeast corner of the north 40 acres of the J. and C. Graham 200-acre tract out of Section 2,-249, T.E.&L. Survey. Kliner-Biggs & Tidwell's No. 1 Cora J. Bullock, 150 feet south and 750 feet east of the northwest

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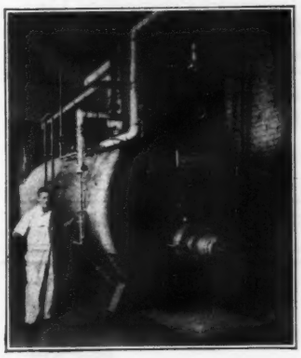

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corner of the south 120 acres of the north 256 acres of Section 261, T.E.&L. Survey. George Mollenkoph's No. 3 B. H. Larimore and others, 360 feet south and 150 feet east of the NW cor. NE, Section 2,247, T.E.&L. Survey. R. I. Pierce's No. 1 Ora Baze, 370 feet south and 470 feet west of the NE cor., Section 354, T.E.&L. Survey. Rathke Oil Co.'s No. 1 A. A. Barnheart, 750 feet north and 1,745 feet west of the southeast corner of the W. M. McCarty Survey, A-1,488. E. R. Riggs' No. 14 B. H. Larimore and others, 750 feet south and 150 feet west of the NE cor. W half SW, Section 2,247, T.E.&L. Survey. Bonner Oil Co.'s No. 1 A. Weichman, 750 feet north and 1,000 feet east of the SW cor. S half NW, Section 173, T.E.&L. Survey. United Production Co.'s No. 1 J. F. Larimore, 456 feet north and 150 feet west of the southeast corner of the west 40 acres of the NW, Section 2,246, T.E.&L. Survey. C. C. Williams' No. 1 H. F. Haygood, 1,250 feet south and 1,150 feet west of the NE cor., Section 1,466, T.E.&L. Survey. Willis & Terrell's No. 2 J. F. Barnett and others, 150 feet north and east of the SW cor. E half SW, Section 2,245, T.E.&L. Survey. Young Brothers and Alexander's No. 2 B. H. Larimore, 150 feet north and east of the SW cor. SW, Section 2,244, T.E.&L. Survey. Fultz & Kay's No. 3 J. Kisinger, 165 feet north and 615 feet west of the southeast corner of their 40-acre lease out of the John Conner Survey, A-57. Mudge Oil Co. and others' No. 1 J. W. Daws, 780 feet north and 150 feet west of the SE cor., Section 754, T.E.&L. Survey. Slick & Knox's No. 1 R. J. Robertson, 260 feet south and 250 feet east of the northwest corner of the R. J. Robertson 174-acre tract out of the J. Poitevent Survey, No. 4, A-2,175.

Corrections

In Pecos County: Dixie Oil Co.'s No. 1 J. H. Tippett, 150 feet south and 440 feet east of the middle of the south line of Section 539, Arnold & Barrett Survey, A-3, and located in Section 61, Block 194, G.C.&S.F. Survey.

In Young County: Willis & Terrell's No. 1 J. F. Barnett and others, 150 feet north and west of the SE cor. E half SW, Section 2,245, T.E.&L. Survey.

In Archer County: W. E. Maxson, Jr.'s No. 1 F. C. Green-C, 150 feet north and 3,969 feet east of the southwest corner of the J. Levins Survey A-259, being 150 feet north and 300 feet east of the southwest corner of his 200-acre lease.

In Coleman County: Coleman Gas & Oil Co. and others' No. 1 M. L. Switzer, 1,185 feet south and 400 feet east of the northwest corner of Lot No. 3, north half of M. Martinez Survey, No. 751.

In Ector County: The Texas Company and others' No. 8 W. E. Connell, 320 feet north and 426 feet west of the SE cor., Section 2, Block B-16, Public School Land.

In Moore County: Texas Interstate Pipe Line Co.'s No. 2 J. T. Sneed, Jr., at the C NE, Section 45, Block 6T, T.& N.O. Survey.

In Pecos County: Phillips Petroleum Co.'s No. 3 Moore, 3,860 feet south and 1,255 feet west of the NE cor., Section 39, Block 194, G.C.&S.F. Survey.

In Young County: Atlantic Oil Production Co. and Christie's No. 3 M. Jarnigan-B, 600 feet northeast of the southwest line and 550 feet southeast of the northwest line of the northeast 50 acres of the southwest 100 acres of the J. Orrick Survey, A-217. Independent Oil & Gas Co.'s No. 4 J. F. Larimore, 463 feet north and 150 feet west of the SE cor., Section 2,246, T.E.&L. Survey. Independent Oil & Gas Co.'s No. 6 J. F. Larimore, 765 feet south and 150 feet west of the NE cor. S half, Section 2,246, T.E.&L. Survey.

EXPLORATION IN COLOMBIA

The geologist in the Colombian ministry of industries has been commissioned to ascertain the deposits of petroleum and similar products in the region of Alto Patia, between Popayan and the mouth of the Pacual River; likewise in the department of Narino.

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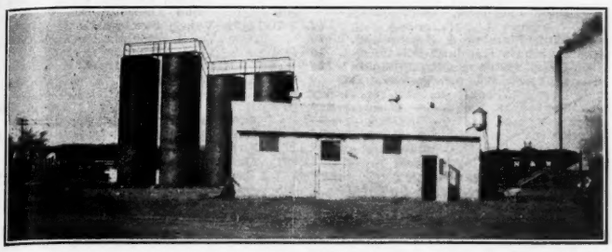

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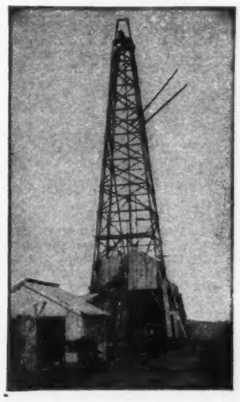

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Detailed Operations in All Fields for Month of June

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	403	2,155	38	56
Central Ohio	119	1,801	27	51
Lima	22	87	6	5
Indiana	25	391	10	3
Michigan	20	3,321	4	1
Kentucky	131	1,881	37	17
Illinois	20	662	6	0
Tennessee	9	0	0	9
Kansas	105	25,592	37	16
Oklahoma	387	414,510	105	34
N. C. Texas	307	12,399	171	14
E. C. Texas	26	65,000	12	0
East Texas	6	0	2	4
West Texas	60	15,938	14	0
Panhandle Texas	65	23,028	5	19
Gulf Coast	85	31,259	26	4
Southwest Texas	63	22,472	28	5
N. Louisiana	94	5,346	40	26
Arkansas	15	79	9	3
Montana	25	718	9	6
Wyoming	22	2,436	1	1
Colorado	5	250	2	0
New Mexico	5	8,735	0	1
Utah	2	0	1	1
Total June	2,011	638,560	590	276
Total May	2,006	616,441	624	213
Difference	5	22,119	34	63

Summary of Rigs and Wells Drilling

	Rigs	Drlg.	Total
Eastern	77	285	362
Central Ohio	60	194	254
Lima	2	31	33
Indiana	4	46	50
Michigan	58	108	166
Kentucky	8	162	170
Tennessee	2	11	13
Illinois	3	28	31
Kansas	60	307	367
Oklahoma	162	793	955
North Central Texas	66	382	448
East Central Texas	12	39	51
East Texas	6	11	17
West Texas	46	224	270
Panhandle Texas	43	152	195
Gulf Coast	30	219	249
Southwest Texas	93	134	227
North Louisiana	75	136	211
Arkansas	9	46	55
Mississippi	9	25	34
Alabama	2	3	5
Montana	20	78	98
Wyoming	32	111	143
Colorado	19	79	98
New Mexico	22	89	111
Utah	1	29	30
Total June	921	3,722	4,643
Total May	877	3,525	4,402
Difference	44	197	241

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	5	989	0	0
Creek	25	705	8	4
Cotton	27	1,196	6	0
Lincoln	4	2,768	3	0
Marshall	16	797	3	0
Muskogee	27	277	15	5
Oklahoma	61	324,644	1	3
Okfuskee	12	134	6	1
Okmulgee	10	18	4	3
Osage	27	1,562	8	3
Pawnee	13	871	2	2
Payne	12	1,580	6	0
Pontotoc	10	1,474	1	0
Pottawatomie	8	9,988	1	0
Seminole	71	64,982	11	2
Stephens	16	1,030	9	0
Wagoner	11	25	5	4
Miscellaneous	32	1,470	17	7
Total June	387	414,510	105	34
Total May	316	303,203	94	27
Difference	71	111,307	11	7

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Total
Alfalfa	0	2	2
Atoka	0	1	1
Beckham	2	2	4
Blaine	0	1	1
Bryan	0	3	3
Caddo	2	12	14
Canadian	0	1	1
Cherokee	1	0	1
Coal	1	2	3
Carter	1	10	11
Cleveland	4	8	12
Comanche	2	4	6
Cimarron	0	1	1
Cotton	1	10	11
Creek	15	34	49
Garfield	0	5	5
Garvin	1	1	2
Grady	4	3	7
Greer	0	2	2
Grant	0	5	5
Harper	0	2	2
Harmon	0	1	1
Hughes	0	20	20
Haskell	0	3	3
Jefferson	0	4	4
Kay	0	8	8
Kiowa	0	2	2
Latimer	0	2	2
Kingfisher	0	1	1
LeFlore	0	2	2
Lincoln	2	22	24
Logan	1	6	7
Love	0	1	1
McIntosh	0	2	2
Marshall	2	8	10
Muskogee	10	26	36
Murray	0	1	1
Noble	1	7	8
Okfuskee	4	23	27
Oklahoma	56	299	355
Okmulgee	3	16	19
Osage	15	30	45
Pawnee	1	15	16
Payne	1	10	11
Pittsburg	0	4	4
Pontotoc	4	13	17
Pottawatomie	12	28	40
Roger Mills	0	2	2
Seminole	9	91	100
Stephens	5	13	18
Texas	0	3	3
Tulsa	0	8	8
Washita	0	1	1
Wagoner	2	7	9
Woods	0	3	3
Woodward	0	2	2
Total June	162	793	955
Total May	141	696	837
Difference	21	97	118

WELLS COMPLETED

CARTER COUNTY

25-4s-3w Coffee, Kanoco Oil Co. 1 75
24-1s-3w E. W. Spigner, Magnolia Pet. Co. 1 375
W. S. Spigner, Magnolia Pet. Co. 393
29-1s-3w Keener, Ven-Mex Oil Co. 1 73
25-4s-3w Coffee, Kanoco Oil Co. 2 73

Completions 5
Production 989

CREEK COUNTY

20-19- 9 Tiger, Frank Root et al 1 30
30-19-10 Brightsman, Pure Oil Co. 1.. gas
20-18- 9 Grayson, Jackson & Wise 1 .. 50
10-17- 9 Bruce, Shell Pet. Corp. 6 30
10-17- 9 Lindsey, Wilcox O. & G. 6.... 40
15-16-11 McIntosh, McGraw Oil Co. 1.. dry
3-17-10 Moses, W. O. Allen et al 1.... gas
33-16- 8 McKinney, Deep-Rock Oil Corp. et al 1 ..... dry
22-16- 9 Orcutt, Twin State Oil Co. 1.. 10
16-14-10 J. Bear, Atlantic O. P. Co. 4 40
20-19- 9 Carter, Phillips Pet. Co. and Gled Oil Co. 1 110
20-19- 9 Koch, Phillips Pet. Co. and Gled Oil Co. 7 200
12-19- 9 Allenn, Abbott et al 1 ..... dry
24-17- 8 B. Fife, Riverland Oil Co. et al 1 ..... dry
11-17-10 Brown, Wilcox and Whitten 5 gas
36-19- 7 Timothy, Gled Oil Co. et al 1-A 50
1-19- 9 Futrell, National Ref. Co. 7.. 20
20-19- 9 Tiger, Johnson O. & R. Co. 1 75
21-18- 8 Graves, J. Winemiller et al 1 dry
27-18- 8 Pine, Merritt et al 1 10
14-18- 9 J. Cook, Holmes & Carter 1.. dry
16-17- 7 Goodin, The Texas Co. 12 .... dry
19-17-10 Wanuka, A. B. Ice Oil Co. 6.. gas
9-15- 8 Beaver, Skelly Oil Co. 2 40
23-14-10 Kimble-Reading, W. A. Jenkins et al 1 ..... dry

Completions 25
Production 705
Dry holes 8
Gas wells 4
Gas production 5,100,000

COTTON COUNTY

33-1s-10w Lawler, Barnsdall Oil Co. 7.. 3
1-2s-10w Patterson, Baldwin & Sultan 4 70
Patterson, Shasta Oil Co. 9.. dry
2-2s-10w Slogan, Shasta Oil Co. 14 50
Burneaugh, Shasta Oil Co. 7.. 200
28-2s-10w Mullins, Oakes et al 1 ..... dry
35-1s-10w McCombs, Harris & McNeal 1 8
1-2s-10w Chambers, Harris & McNeal 5 60
Chambers, Perkins & Cullum 2 30
E. Chambers, Shasta Oil Co. 3 20
Patterson, Shasta Oil Co. 3.... 25
Patterson, Shasta Oil Co. 11.. 75
Watkins, Shasta Oil Co. 3.... 5
2-2s-10w Burneaugh, Shasta Oil Co. 9 25
12-2s-10w Flanagan, Margay Oil Corp. 1 dry
1-2s-10w Chambers, Perkins & Cullum 3 dry
Chambers, Shasta Oil Co. 4... 25
2-2s-10w Cobb, Shasta Oil Co. 6 75
B. Burneaugh, Shasta Oil Co. 1 25
34-1s-10w Shackelford, Harris & McNeal 15
14-2s-10w McCloud, Jenkins & Arrington 1 dry
1-2s-10w Patterson, Shasta Oil Co. 13.. 150
Patterson, Shasta Oil Co. 12.. 125
Watkins, Shasta Oil Co. 5.... 150
2-2s-10w Moore, Peckham & Patterson 1 30
Slogan, Shasta Oil Co. 15..... 30
11-2s-10w Burneaugh, Shasta Oil Co. 1.. dry

Completions 27
Production 1196
Dry holes 6

LINCOLN COUNTY

16-17-5 School Land, Ed Jilson et al 1 dry
30-17-4 Estes, Blackwell O. & G. Co. 1 dry
8-14-4 Decker, Magnolia Pet. Co. 2.. 2765
16-14-4 School Land, Magnolia Pet. Co. 1 ..... dry

Completions 4
Production 2768
Dry holes 3

MARSHALL COUNTY

2-5s-5 Bynum, Walter Cline 1 ..... dry
24-5s-5 Null, Bilbo Oil Trust Co. 5... 100
Null, F. W. Merrick 18 100
Null, Poor Boy Oil Co. 1 18
30-5s-5 D. Sullivan, Max Westheimer 3 80
13-5s-5 McComas, Goddard Oil Co. 5.. 45
24-5s-5 Null, Fleming & Kimbrell 5.. 45
Null, F. W. Merrick 19 50
Null, Bilbo Oil Corp. 6 50
30-5s-5 Dillie, Magnolia Pet. Co. 1... 57
Davis-Sullivan, Max Westheimer 4 52
24-5s-5 Null, Fleming & Kimbrell 6.. 90
30-5s-6 Marshall, Goddard Oil Co. 3.. 10
Davis-Sullivan, Otto Reynolds 1 100
9-6s-6 Blaylock, Scevner-Tomason Co. 1 ..... dry
8-7s-6 Taylor, M. L. Sheeler 1 ..... dry

Completions 16
Production 797
Dry holes 3

MUSKOGEE COUNTY

19-15-16 I. Russell, P. Boyle et al 4..... 20
8-15-18 Stedham, E. A. Hollis et al 1.. dry
M. Brown, H. L. Jolly 1..... dry
10-15-18 Rowsey, E. Price 1..... dry
17-15-18 Chandler, E. Mills et al 1.... gas
33-14-19 Downing, M. S. Musselem 3.. dry
9-15-18 Spaulding, E. B. Grubbs et al 1 dry
8-13-16 Lewis, Robinson Bros. 6..... dry
33-16-15 D. Richards, Mack Drlg. Co. 3 10
8-15-15 N. Barnett, Bryant Pet. Co. 10 7
9-15-18 Spaulding, J. M. Foltz 3..... 100
L. Fields, Western Dev. & Exp. Co. 3 100
11-15-18 Mickens, Wm. La Pierrie 1.... dry
14-13-18 Foreman, R. F. Ray et al 1.. gas
30-12-19 Mulkey, Midwestern O. & G. 1. dry
12-15-17 E. Sango, C. D. Bradley 1.... dry
8-15-18 Spaulding, Ash Bros. 1..... gas
9-15-18 P. Rentie, C. F. Finefield 1.... dry
32-14-16 M. Kernal, Decius & Garrett 1. 15
34-16-15 Dunaway, Mack Drlg. Co. 1... gas
8-15-15 N. Barnett, Babcock Bros. 8... 25
J. Ware, Harsh & Dulaney 1.. dry
17-15-16 J. Harrison, B. Goodman et al 7 dry
30-14-18 M. Minter, S. E. Kelly et al 2 dry
8-13-16 C. Jackson, Mazda Oil Co. 6.. dry
20-13-16 C. London, Bement Oil Co. 2.. dry
31-12-19 L. Lacey, Mid-Western O. & G. Co. 1 ..... gas

Completions 27
Production 277
Dry holes 15
Gas wells 5
Gas production 13,984,480

OKLAHOMA COUNTY

1-11-3w Jones, I. T. I. Oil Co. 2.... 14,632
15-12-3w Thompson, Cromwell-Franklin Oil Co. 2..... dry
23-11-3w Werner-Farley, I. T. I. Oil 1 4,392
25-11-3w Johnson, I. T. I. Oil 4..... 4,717
29-11-2w Hussman, Tom Slick Oil 2.. gas
30-11-2w Bodine Anderson, I. T. I. Oil Co. 2 16
Bodine Anderson, I. T. I. Oil Co. 3 279
Emmerson, I. T. I. Oil Co. 5 3,136
Emmerson, I. T. I. Oil Co. 8 4,422
Emmerson, I. T. I. Oil Co. 10 1,135
Stamper, Sinclair O. & G. 4 gas
31-11-2w Jones, I. T. I. Oil Co. 8... 2,610
Jones, I. T. I. Oil Co. 9... 2,908
1-11-3w Jones Community, I. T. I. Oil Co. et al 3..... 10,781
12-11-3w E. Theimer, I. T. I. Oil Co. et al 2 217
Lowery, Wirt Franklin Pet. Corp. 4 16,233
13-11-3w C. Brokaw, I. T. I. Oil Co. et al 3 11,303
14-11-3w Clarence Trosper, I. T. I. Oil Co. 1 6,906
24-11-3w Olds, Coline Oil Co. 10..... *2,119
Speegle, I. T. I. Oil et al 2 2,023
25-11-3w Clauer, Coline Oil Co. 1.... *1,203
Clauer, Coline Oil Co. 5.... *2,115
18-11-2w Warren, Coline Oil Co. 8.. 9,298
31-11-2w Hoopes, Tom Slick Oil Co. et al 5 7,695
Hoopes, Skelly Oil Co. 8.... 12,339
32-11-2w Salasman, I. T. I. Oil Co. et al 1 738
Salasman, I. T. I. Oil Co. et al 3 912
Sigmon, Prairie O. & G., Slick and Phillips Pet. 1. 10,000
10-11-3w Holmes, Hall & Briscoe 1.. *9,743
11-11-3w Precure, I. T. I. Oil Co. 1.. 3,405
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 19..... 31,002
13-11-3w Trosper, I. T. I. Oil Co. 11 4,285
23-11-3w Mary Unshell, I. T. I. Oil 2 2,050
Mollman, Mid-Kansas O. & G. Co. 1 2,841
25-11-3w Johnson, I. T. I. Oil Co. 2.. 1,893
31-11-2w Hoopes, Skelly Oil Co. 7... 3,995
Jones, I. T. I. Oil Co. 7.... 2,462
18-11-2w Warren, Coline Oil Co. 9... 5,544
30-11-2w Emmerson, I. T. I. Oil 7... 1,687
Emmerson, I. T. I. Oil 9... 3,274
Petty, Shell Pet. Corp. 7... 401
1-11-3w Jones Community, I. T. I. Oil Co. 2 17,164
Martin, Tom Slick Oil 1.... 9,704
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 17..... *17,953
E. Theimer, I. T. I. Oil 3.. 16,690
13-11-3w Trosper Park, Cromwell-Franklin Oil Co. 15..... 5,240
36-11-3w School Land No. 54, Sinclair O. & G. Co. 4..... *9,050
31-11-2w Hoopes, Tom Slick Oil Co. et al 6 2,237
Hoopes, Tom Slick Oil Co. et al 8 798
1-11-3w Townsend, Tom Slick Oil Co. et al 1..... 9,302
14-11-3w Trosper Park, Cromwell-Franklin Oil Co. et al 14.. 11,131
24-11-3w Olds, Coline Oil Co. 11.... 2,128
36-11-3w School Land No. 54, Sinclair O. & G. Co. 5..... 1,000
School Land No. 54, Sinclair O. & G. Co. 8..... 3,370
29-11-2w Hussman, Tom Slick Oil Co. et al 1 400
30-11-2w Kinter, Sinclair O. & G. Co. and Amerada Pet. 10 .... gas
31-11-2w Venci, Sinclair O. & G. 2.. 3,290
Venci, Sinclair O. & G. 5.. 4,960
Venci, Sinclair O. & G. 7.. 1,940
Venci, Sinclair O. & G. 8.. 3,720
32-11-2w Salasman, I. T. I. Oil Co. et al 4 344

Completions 61
Production 324,644
Dry holes 1
Gas wells 3
Gas production 231,500,000

*12 hours' production.

OKFUSKEE COUNTY

32-12-10 Simmer, Continental Oil Co. 1. dry
35-11- 9 B. Severs, Suppes & Robinson 3 13
15-11-11 Washington, Champlin O. & R. Co. 9 35
26-11-11 Likowski, F. A. Havel 1-A... 75
11-10-11 Simmer, Atlantic O. P. Co. 6.. 5
8-13-10 Davis, Campbell Cothran, Inc., et al 1 ..... dry
14-13-19 Burton, Flynn & Morgan 1.... dry
15-13-19 Allen, Andrew Erwin et al 1.. dry
30-12-12 Randall, Mitchell Oil Co. 11... dry
35-11- 9 Wind, Gilcrease Oil Co. 3..... gas
25-12-12 Stewart, Kim Oil Co. 1..... dry
11-10-11 Simmer, Regal Oil Co. 11..... 7

Completions 11
Production 134
Dry holes 6
Gas wells 1
Gas production 2,000,000

OKMULGEE COUNTY

31-15-13 J. Perryman, D. M. Logan 1-A gas
14-14-14 V. Colbert, J. E. Wallace 15... dry
27-13-11 Scott, J. H. Rebold Oil Co. 3.. 4
32-15-13 Hood, Kirkland & Son 1-A.... dry
27-12-12 Marshall, Eagle Picher Lead Co. 1 ..... gas
9-15-13 Brown, Kirkland & Son 3.... 1
6-15-12 Fish, L. C. Wheeler et al 3.... dry
29-13-12 Palmer, Sunray Oil Corp. 2.... dry
22-13-14 Sloan, Aiken Oil Co. 7..... 7
28-12-14 Gooden, Jordan et al 1..... gas

Completions 10
Production 13
Dry holes 4
Gas wells 3
Gas production 6,000,000

OSAGE COUNTY

23-26- 6 Vacuum Oil Co. et al 2..... 421
34-24- 8 W. D. Gray et al 6..... 12
14-23- 8 I. T. I. Oil Co. 325..... 200
22-23-11 Barnsdall Oil and Brandstetter 1 ..... dry
25-21- 9 Devonian Oil Co. 2..... dry
34-21-11 Okla. Natural Gas 1,780..... dry
30-25- 8 Prairie O. & G. Co. 7..... 120
31-25- 8 Prairie O. & G. Co. 4..... 61
22-21-11 Peters Pet. Corp. 1..... dry
20-29- 9 Winona Oil Co. 14..... 40
28-26- 6 Vacuum Oil Co. 5..... 100
10-26- 8 Peters Pet. Corp. and P. & R. Corp. 4 ..... dry
1-23- 8 I. T. I. Oil Co. 328..... gas
10-21- 9 Clint Moore est., et al 1..... dry
23-27-11 Empire O. & R. Co. 2..... 70
27-27-11 Peters Pet. Co. et al 6..... 40
32-26-12 Skelton & More 10..... 35
36-25-11 J. H. Alexander et al 3..... 10
19-25- 8 Atlantic O. P. Co. 6..... 160
30-25-12 I. T. I. Oil Co. 426..... gas
32-23-10 Union Oil & Mining Co. 4..... 10
18-22-10 Mid-Co Oil Co. 20..... 100
11-21- 8 Turman Oil Co. 2..... 125
5-21- 9 Peter Adamson 3..... dry
6-21- 9 Millard & Stanley 2..... dry
30-21-11 Okla. Natural Gas 1,787..... gas
34-20-10 Lewis Prod. Co. 1..... 50

Completions 27
Production 1,562
Dry holes 1
Gas wells 3
Gas production 7,500,000

PAWNEE COUNTY

6-20- 8 Cotton, P. J. Breslin et al 2.. gas
30-21- 9 Edmiston, John Byrnes 7..... 20
Edmiston, Geraldine Oil 6..... 15
8-21- 8 Crees, Roy Lisk et al 1..... dry
26-20- 9 Copeland, Hay et al 6..... 255
30-21- 9 Edmiston, Geraldine Oil Co. 7. 30
Edmiston, Seminole Oil Co. 1.. 5
20-20-10 Miller, Campbell Drlg. Co. 1... gas
30-21- 9 Edmiston, John Byrnes 8..... 25
6-20- 8 Cotton, Henreco Prod. Co. 3... 200
Cotton, Martin et al 7..... 200
14-20- 9 Ackley, Peter Adamson, Jr. 1 dry
24-20- 9 Ackley, O. D. Steen 1..... 25

Completions 13
Production 871
Dry holes 2
Gas wells 1
Gas production 5,250,000

PAYNE COUNTY

16-19-5 School Land "B," Skelly Oil Co. and Deep Rock Pet. Corp. 1. 401
4-17-4 Funnell, Wheeler & Mote 1.... dry
6-17-4 Payne, Magnolia Pet. Co. 6.... 345
17-19-5 Massie, Skelly Oil Co. and Deep Rock Oil Corp. 1..... 74
7-19-6 C. Page, Magnolia Pet. Co. 4... dry
4-18-5 Harris, Pure Oil Co. 1..... dry
9-18-5 Echo Hawk, Deep Rock Oil 4... 120
5-17-4 Sharrum, Mulberry Oil Co. 3... 100
6-17-4 Kaufman, Magnolia Pet. 1-A.. dry
Payne, Magnolia Pet. Co. 5..... 525

1-18-5 Ellis, Home Gas Co. 5..... dry
31-18-4 McFeathers, Cushing O. & R. 1. dry

Completions 13
Production 1580
Dry holes 6

PONTOTOC COUNTY

31-5-5 Stafford, Denver P. & R. Co. 3.. 100
Stafford, Denver P. & R. Co. 2.. 100
32-5-5 Mauldin, Superior Oil Corp. 6 524
Mauldin, Superior Oil Corp. 7.. 360
31-5-5 Coker, Benedum-Trees Oil Co. 3. 100
Stafford, Denver P. & R. Co. 2.. 100
32-5-5 Burke, Brydria Oil Co. 1..... 40
12-4-7 Norris, W. A. Delaney et al 1... dry
17-5-8 McCall, Sunray Oil Corp. 16..... 125
31-5-5 Lowry-Wendle, Benedum-Trees Oil Co. 1..... 25

Completions 10
Production 1474
Dry holes 1

POTTAWATOMIE COUNTY

8-9-5 Townsite, Bakon Drlg. Co. 1....1567
Townsite, Verne Brown Drlg. 1. 841
Townsite, A. B. Kitney 1..... 360
15-7-4 Richardson, Magnolia Pet. Co. 3 2
19-9-5 Caulding, Pure Oil et al 1..... 225
23-6-3 Butler, I. T. J. Oil Co. 1.....1800
Atkins, Wilcox O. & G. Co. 1...2176
22-6-3 Bullock, Payne et al 3.....3017

Completions 8
Production 9988

SEMINOLE COUNTY

22- 9-5 Edwards, Amerada Pet. et al 2. 8010
23- 9-5 Grounds, Amerada Pet. 1.....11,170
26- 9-5 Johnson, The Texas Co. 1..... dry
20- 9-6 Campbell, Carter Oil Co. 3..... 695
Campbell, Carter Oil Co. 5..... 145
11- 7-6 Denby, Magnolia Pet. Co. 5..... 328
13- 7-6 Carlina, Gypsy Oil Co. 1..... dry
5- 7-7 Smith, Mid-Cont. Pet. Corp. 15.. 566
21- 6-6 Caesar, Burke-Greis Oil 1.....2295
17- 6-6 Griffin, Prairie O. & G. 3.....1010
7- 6-8 Aldridge, Carter Oil Co. 2..... 30
14- 9-5 P. Carbitcher, Magnolia Pet. 1.. 400
P. Carbitcher, Magnolia Pet. 3.. 680
Hulbutta, Gypsy Oil Co. 1..... 110
19- 9-6 Lasley, Tidal Oil et al 5..... 455
33- 8-6 Losoche, Gypsy Oil Co. 1..... dry
Robertson, Superior Oil Corp. and Blackwell O. & G. 1.... dry
23- 9-5 Ground, Prairie O. & G. 2..... dry
12- 7-6 Haney, Sinclair O. & G. 2..... dry
5- 7-7 Smith, Mid-Cont. Pet. Corp. 18 335
9- 6-6 Wisey, Magnolia Pet. Co. 2.... dry
16- 6-6 Okfuskee, Independent O. & G. Co. 3 933
Okfuskee, Independent O. & G. Co. 4 747
Roberts, McCulloch et al 2..... 60
20- 6-6 P. Harjo, Mid-Cont. Pet. 1.....4880
29- 6-6 Burgess, Hilton Phillips et al 1.1455
5- 7-7 Smith, Prairie O. & G. Co. 7... gas
15- 9-5 V. Jones, Sinclair O. & G. 2....1177
24- 9-5 Gross, Amada Pet. et al 3..... 160
24- 9-5 Moore, Magnolia Pet. 4..... 782
13- 6-7 Bond, Signal Oil Co. 6..... dry
29- 6-6 Burgess, Hilton Phillips et al 2.4020
13- 5-7 Fleet, Blackwell O. & G. 4..... 405
23- 5-7 Peters, Gypsy Oil Co. 6..... gas
9- 8-5 Yoakum, C. B. Shaffer 10..... 2
15- 9-5 M. Lena, Dixie Oil Co. 1..... 575
Lena, Dixie Oil Co. 2..... 227
10- 9-7 Swartz, Twin State Oil 2..... dry
18- 9-7 Perry, Continental Oil and Sinclair O. & G. 4..... 105
13- 7-6 Bean, W. B. Pine 4..... 420
24- 7-6 Cudjo, Magnolia Pet. Co. 3..... dry
13- 7-6 I. Redd, Prairie O. & G. 4..... 140
5- 7-7 K. Payne, Gypsy Oil 9..... 535
Smith, Mid-Cont. Pet. 21..... 240
17- 6-6 Johnson, Barnsdall Oil Co. 1.... 819
Johnson, Barnsdall Oil Co. 2.... 496
Johnson, Barnsdall Oil Co. 3.... 778
Atkinson, The Texas Co. 5..... 90
Atkinson, The Texas Co. 6..... 65
20- 6-6 Caeser, Shell Pet. Corp. 2..... 660
13- 5-7 Lusty, Barnsdall Oil Co. 3..... 185
28- 5-7 Peters, Gypsy Oil Co. 4.....1035
32-10-6 Grisso, Twin State Oil Co. 1....2780
23- 9-5 Grounds, Magnolia Pet. 2..... 368
24- 9-5 Maguire, Continental Oil 3..... 955
19- 9-6 Lasley, Tidal Oil et al 4..... 125
Lasley, Tidal Oil et al 6..... 215
11- 7-6 Caesar, Shell Pet. Corp. 2-A.... 81
4- 7-7 Chilcoat, The Texas Co. 2..... 260
5- 7-7 Payne, Gypsy Oil Co. 8..... 385
17- 6-6 Wren, Gypsy Oil Co. 3..... 447
Wren, Gypsy Oil Co. 4..... 507
17- 6-6 Johnson, W. B. Pine 1.....1140
20- 6-6 A. Harjo, Barnsdall Oil 1..... 335
T. Harjo, Gypsy Oil 1..... 920
Hyde, Hilton Phillips et al 3.. 120
Caesar, Shell Pet. Corp. 3.....4544
Charlie "A," Twin State Oil 3..1155
13- 5-7 Reed, Magnolia Pet. 5..... 125
22- 5-7 Dinah, The Texas Co. 1.....3300
21- 6-6 Amey, Prairie O. & G. Co. and T. B. Slick 2..... dry

Completions 71
Production 64,982
Dry holes 11
Gas wells 2
Gas production 19,000,000

STEPHENS COUNTY

33- 1- 8w Fair, Carl Wylie 1..... dry
10-2s- 6w Hartley, Wirt Franklin Pet. 1 137
31-2s- 7w Watkins, Pace et al 3..... dry
Watkins, Pace et al 6..... 500
27-1s- 8w Wilkinson, Pearce & Brown 7 45
1-2s-10w Patterson, Shasta Oil 14..... 75
15-2s- 6w Christy, Magnolia Pet. Co. 2. 90
15-2s- 6w Randle, W. H. Smith 1..... dry
23- 1- 9w Brown, Crane & Rankins 1... 50
5-2s- 8w Miller, Empire O. & R. 3.... dry
29-1s- 8w Pope, Heydrick et al 1..... dry
13-1s- 4w M. Green, Magnolia Pet. 10.. 133
16-1s- 8w Blake, Sykes & Fossett 1.... dry
30-2s- 7w Dudley, Geo. Pace et al 1.. dry
30-2s- 7w Kobel, McMeans Oil Co. 1.... dry
15-2s- 6w Wilkerson, Dunmar Oil 1.... dry

Completions 16
Production 1030
Dry holes 9

WAGONER COUNTY

23-18-16 Childers, W. B. Pine 1..... gas
5-15-18 Ford, W. J. Metzger 1..... dry
8-18-15 Roberts H. A. Davis et al 4.. dry
30-18-15 D. Drew, Mechlin & Hosey 4.. gas
6-17-15 M. Kelly, E. J. Benedict 7.... 15
22-16-19 Crow, C. F. Finefield 2..... 10
31-18-17 W. Kernal, North et al 2..... gas
33-17-16 N. Jackson, Bryan Pet. 1..... gas
5-18-19 Sequoyah, E. A. Ross et al 1.. dry
35-17-17 E. Williams, Vinita Dev. Co. 4 dry
13-16-15 Littlehead, Sheridan Oil 3.... dry

Completions 11
Production 25
Dry holes 5
Gas wells 4
Gas production 9,407,760

MISCELLANEOUS COUNTIES

Caddo County—
31-6- 9w Gafney, English Drlg. Co. 5... 125
25-6-10w C. Edwards, Magnolia Pet. 2. dry
31-6- 9w Gregory, Mid-Kans. O. & G. 2 dry
26-6-10w Huron, English Drlg. Co. 1... dry
2-5- 9w Wade, Mid-Kans. O. & G. 8.. 70
12-5- 9w Royce, Bullock et al 2..... 150
33-6- 9w Estes, Caddo Pet. Co. 1..... gas

Cleveland County—
8-10-2w Sudik, Phillips Pet., Prairie, and T. B. Slick 1..... dry

Grant County—
25-26-3w Tapor, Otstot Dev. Co. 1..... dry
12-28-4w Dedmond, Boucher et al 1.... dry

Grady County—
31-4-7w Miller, Meridian Gas Co. 1.... gas

Garfield County—
25-23-4w Gibson, Champlin O. & R. 1.. 394

Hughes County—
5-9-10 Hulley, G. W. Clark et al 1.... dry

Noble County—
33-21-1w Waltemier, Sunray Oil 1-A.... gas

Jefferson County—
34-6s-5w Seay, O. V. Beck 9..... 300
3-7s-5w Riverbed, Farland Oil 1..... 75
34-6s-5w Seay, O. V. Beck 10..... 200

Kiowa County—
13-1-17w Howell, Allen Bros. 2..... dry
34-7-17w Fisher, W. C. Adams 1..... dry

Kay County—
17-28-1 Fester, Wentz Oil Corp. 2..... 156
32-26-2 McNeal, J. A. Vincent and National Union Oil 1..... dry

Logan County—
25-19-5w Storey, Superior Oil Corp. 1... dry

Le Flore County—
35-7-25 Fairgrounds, Hiatt Gas Co. 1.. gas

Tillman County—
19-1s-16w Barba, Paul R. Flake 1..... dry
4-4s-16w Pautchee, Bridwell Oil 1..... dry

Tulsa County—
7-19-10 McClain, Johnson O. R. Co. 1-A dry
29-19-12 Miller, Brooks Drlg. Co. 5.... dry
18-17-13 Crosby, Cornett et al 1-B..... dry
20-19-14 Grayson, H. C. Dean et al 1.. dry

Pittsburg County—
9-7-18 Brown, Rogers et al 1..... gas
10-7-18 Bascom, Central States L. & P. Co. 1 ..... gas
9-7-18 Carney, Midwestern O. & G. 1.. gas

Completions 32
Production 1470
Dry holes 17
Gas wells 7
Gas production 52,500,000

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	9	500	6	0
Cowley	8	210	3	2
Greenwood	19	1,220	9	0
McPherson	27	20,431	4	0
Sedgwick	6	782	2	0
Stevens	11	0	0	11
Miscellaneous	25	2,449	13	3
Total June	105	25,592	37	16
Total May	108	53,295	34	6
Difference	3	27,703	3	10

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Barton	1	0	1
Butler	7	20	27
Barber	0	5	5
Chase	0	3	3
Chautauqua	1	2	3
Clark	0	1	1
Clay	0	1	1
Coffey	1	4	5
Cowley	2	12	14
Dickinson	0	3	3
Douglas	0	1	1
Edwards	2	1	3
Elk	3	4	7
Ellis	0	9	9
Ford	0	2	2
Geary	0	1	1
Greenwood	4	29	33
Gove	0	1	1
Graham	0	2	2
Grant	0	1	1
Harper	0	1	1
Harvey	1	1	2
Kiowa	0	3	3
Lyon	1	1	2
McPherson	4	33	37
Marion	2	7	9
Marshall	0	1	1
Morris	2	3	5
Morton	7	12	19
Norton	1	0	1
Pawnee	0	2	2
Pratt	0	1	1
Reno	1	6	7
Rice	2	15	17
Riley	0	2	2
Rooks	1	1	2
Rush	0	3	3
Russell	3	11	14
Saline	0	2	2
Sedgwick	3	9	12
Sheridan	0	1	1
Stafford	0	3	3
Stevens	6	8	14
Sumner	4	12	16
Trego	0	1	1
Wallace	0	1	1
Washington	0	1	1
Woodson	1	4	5
Total June	60	307	367
Total May	59	209	268
Difference	1	98	99

WELLS COMPLETED

BUTLER COUNTY

20-26-5 Koogler, Empire O. & R. 97.... 75
16-29-4 Durham, Durham et al 1..... dry
28-25-4 Pierce, Allison & Fitzwilliams 4 dry
20-26-5 Koogler, Empire O. & R. 96.... 150
22-27-5 Brandenberger "A," Empire O. & R. 8 275
31-26-6 Unger, Walton Oil 1..... dry
12-27-3 Heath, Johnson et al 1..... dry
18-27-5 Phillips, Davidson et al 1..... dry
14-28-6 Hamilton, Nathan et al 1..... dry

Completions 9
Production 500
Dry holes 6

COWLEY COUNTY

33-31-5 Spencer, Crow et al 1..... dry
8-32-5 Brant, Ben Gallup et al 1..... gas
2-30-4 Seal, Empire O. & R. et al 1... dry
7-30-5 Daniels, Wakefield et al 2..... 60
17-31-6 Harris, Lewis Prod. Co. 1..... gas
20-31-6 Fitzgerald, Lewis Prod. Co. 2... 75
12-32-4 Holt, Roth & Faurot 2..... 75
9-32-5 Powers, Crow et al 3..... dry

Completions 8
Production 210
Dry holes 3
Gas wells 3
Gas production 1,100,000

GREENWOOD COUNTY

36-23- 8 Burke, Derby Oil et al 1..... dry
36-23-11 Patterson "B," Empire O. & R. 3 ..... dry
25-24-12 Beavers, Derby Oil 3..... 30
1-24-11 Newhouse, Prairie O. & G. 4.. 150
36-25- 9 Good, Harwood Oil 1..... dry
36-23-11 Patterson "C," Empire O. & R. 8 240
36-24-10 Mack "B," McGinnis et al 3... 15
36-24-10 Jones, Aladdin Pet. and Phillips Pet. 2 290
6-24-12 Shook, Syndicate Oil Co. 5.... 200
9-22-10 Pixlee, Theta Oil 2..... 35
27-22-11 Wick, Skelly Oil and Tidal Oil 21 115
23-27-11 Kelly, McMahon et al 1..... dry
21-22-12 Fankhouser, Simmons et al 1.. dry
9-25-13 Ralston, Bisagno et al 4..... dry
7-22-10 Pixlee, Ritchey & Moore 2.... dry
22-22-13 Young, Derby Oil et al 6..... 100
29-22-13 Luthi, Amerada Pet. 7..... 45
Blanck, Phillips Pet. et al 4.. dry
27-23-11 Winegar, Simmons and Amerada Pet. Corp. 2..... dry

Completions 19
Production 1220
Dry holes 9

McPHERSON COUNTY

3-21-3w Morehouse, E. W. Marland, Inc. 2 834
Krehbiel, Gypsy Oil 4..... 844
4-21-3w Stucky, Gypsy Oil 1..... 100
Morehouse, Sinclair O. & G. 2. 917
9-21-3w Voshell, Mid-Kansas O. & G. 5 720
Voshell, Mid-Kansas O. & G. 6.1266
Stucky, Shell Pet. Corp. 7..... 845
10-21-3w Voshell, Sinclair O. & G. 1... 200
Krehbiel, E. W. Marland, Inc. 1 ..... dry
22-21-3w Kaufman, Helmerick & Payne et al 1 ..... dry
3-21-3w Morehouse, Independent O. & G. 1 1281
4-21-3w Krehbiel, Prairie O. & G. 5.. 450
36-19-2w Johnson, Shell Pet. Corp. 1... dry
1-20-2w Ritz, Shell Pet. Corp. 4..... dry
12-20-2w Munn, The Texas Co. 2.....1967
3-21-3w Krehbiel, Gypsy Oil 2..... 400
Krehbiel, Gypsy Oil 3..... 372
4-21-3w Morehouse, Sinclair O. & G. 1 750
Morehouse, Sinclair O. & G. 2 775
Krehbiel, Barnsdall Oil 3....2470
Krehbiel, Prairie O. & G. 6.. 850
9-21-3w Stuckey, Derby Oil 4.....1525
33-20-3w E. Stuckey, Gypsy Oil 1.....1600
4-21-3w Krehbiel, Barnsdall Oil 4..... 745
Morehouse, Sinclair O. & G. 5 800
Krehbiel, Prairie O. & G. 3.. 350
Krehbiel, Prairie O. & G. 4.. 370

Completions 27
Production 20,431
Dry holes 4

SEDGWICK COUNTY

35-26-1w Petrie, T. C. Johnson 1..... dry
2-26-2 Miller, Mars Oil 2..... 20
15-26-2 Hladick, Hayes et al 1..... dry
22-26-2 Rapp, Graham Bros. and Barnsdall Oil Co. 2..... 63
1-26-1w Bright, Prairie O. & G. and T. B. Slick 3 120
15-26-2 Fischer, Shell Pet. Corp. 7.... 579

Completions 6
Production 782
Dry holes 2

STEVENS COUNTY

17-32-37w Hobble, Argus Gas Co. 1..... gas
11-33-39w Christopher, Argus Gas 1.... gas
11-33-38w Reamy, McNabb et al 1..... gas
13-33-37 Smith, Argus Gas 1..... gas
12-34-39w Hicks, Argus Gas 1..... gas
30-34-36w Parker, Argus Gas 1..... gas
19-32-37w Crawford, Argus Gas 1..... gas
25-33-39w Pride, Argus Gas 1..... gas
4-35-38w Lowery, Trees Oil Co. 1..... gas
27-32-37w Porter, Argus Prod. Co. 1.... gas
33-33-37w Sherwood, Argus Prod. Co. 1. gas

Completions 11
Gas wells 11
Gas production 78,871,000

MISCELLANEOUS COUNTIES

Barber County—
24-33-13w Alexander, Barbara Oil 2.. gas

Chase County—
31-19-8 Cook, Steinbuchel et al 1..... dry
31-19-6 Meirhoff, Chase Co. P. L. 1.... dry
36-22-9 Leedy, Polhamus et al 3..... 20

Chautauqua County—
30-22-11 Glenn, Morrow et al 1..... gas

Coffey County—
13-23-14 Levering, Linn O. & R. 1..... dry

Edwards County—
31-25-17w McCarthy, Dixie Oil and Amerada Pet. Corp. 1..... 240
21-26-17w Johnson, Skelly Oil 1..... dry

Elk County—
22-31-10 Davison, Sharky & Ames 1.... dry

Ellis County—
1-13-16w Weiland, Davis et al 4..... 190
5-12-17w Clinton, Phillips Pet. 1..... 195
36-12-16w Austin, Midwest Explin. 13.. 40

Harvey County—
13-22-3w Hege, Gypsy Oil 1..... dry

Linn County—
22-21-22 Campbell, Ferguson & Hiatt 1. dry

Lyon County—
29-20-10 Ratcliff, Aladdin Oil Co. and Phillips Pet. 1..... dry

Marion County—
36-19-5 Wise, Chase County Gas Co. 1. dry

Morton County—
16-34-39w Armstrong, Argus Prod. 1.... gas

Rice County—
21-20-10w Mezger, Allison & Fitzwilliam et al 1.....1404

Reno County—
14-22-6w Olson, McCulloch Oil 1..... dry

Sumner County—
9-31-1 Welch, Harris & Haun 1-A... dry
28-31-1w Kamas, Sinclair O. & G. 1.... 160

Trego County—
19-14-21w Reitmeyer, Dixie Oil Co. and Amerada Pet. 1..... dry

Stafford County—
11-23-14w Mueller, Gibson et al 1..... dry

Russell County—
36-13-15w Dillner, Empire O. & R. 1.. 160
5-14-15w Dortland, Midwest Explin. 36 40

Completions 25
Production 2449
Dry holes 13
Gas wells 3
Gas production 43,500,000

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	49	842	30	0
Baylor	5	319	3	0
Brown	14	125	10	1
Callahan	14	62	11	1
Clay	2	45	0	0
Coleman	11	262	4	4
Comanche	4	0	3	1
Cooke	4	8	3	0
Eastland	10	243	3	3
Erath	3	0	2	1
Haskell	1	0	1	0
Jack	4	200	3	0
Montague	9	130	4	0
Palo Pinto	2	0	1	1
Shackelford	14	593	7	0
Stephens	4	13	3	0
Throckmorton	2	0	1	1
Wichita	22	757	6	0
Wilbarger	22	766	10	0
Young	111	8,524	67	1
Total June	307	12,889	171	14
Total May	334	15,739	166	17
Difference	27	2,850	5	3

Summary of Rigs and Wells Drilling

Archer	21	10	38	69
Brown	2	9	9	20
Callahan	1	3	9	13
Coleman	2	5	22	29
Cooke	1	4	4	9
Clay	0	1	3	4
Eastland	5	8	16	29
Erath	0	3	2	5
Jack	1	3	8	12
Montague	1	3	5	9
Palo Pinto	3	5	11	19
Shackelford	1	1	12	14
Stephens	1	4	12	17
Throckmorton	0	1	7	8
Wichita	3	3	18	24
Wilbarger	6	19	15	40
Young	16	23	53	92
Miscellaneous counties	2	19	14	35
Total June	66	124	258	448
Total May	88	107	263	458
Difference	22	17	5	10

WELLS COMPLETED

ARCHER COUNTY

Wilson-D, Barnsdall Oil Co. 2 ..... dry
Wilson-R, L. T. Burns 1 27
Fee, C. L. Abercrombie et al 1 ..... dry
Fails, Bridwell Oil Co. 4 90
Harmel-B, Consolidated Oil Co. of Texas 1 50
Richardson, J. H. Massie 11 120
Farmer et al-B, Riner & Omohundro 1 dry
Dupriest, Shell Pet. Corp. 2 43
Harmel, Virgil Oil & Gas Co. 6 40
Harmel, Virgil Oil & Gas Co. 8 45
Wilson-A, Barnsdall Oil Co. 15 55
Turbeville-G, L. T. Burns 1 ..... dry
Wilson, W. B. Omohundro 1 ..... dry
Mangold, Perkins & Cullum 1 ..... dry
White, F. Stroubie et al 1 ..... dry
Perkins, Underwood Drlg. Co. et al 2 ... dry
O. C. Boellstorff, Bass & Dillard 1 ..... dry
Fails, Bridwell Oil Co. 5 30
Anderson-C, Fain-McGaha Oil Corp. 1.. dry
Symank, Gilliland et al 4 40
Jeske, Golding & Cochran 2 60
Richardson, J. W. Harris, Jr., et al 1 .. dry
Kunkel-C, T. F. Hunters 1 ..... dry
Fisk, Jess Lincoln et al 1 ..... dry
Garvey Bros., L. A. Long 1 ..... dry

Goodwin, Steel Drlg. Co. and King Roy. Co. 1 ..... dry
Dickey, O. R. Tatutenhaha 1 ..... dry
Brown-B, C. E. Bailey et al 1 42
Tarr-B, Consolidated Oil Co. of Texas 1 dry
Turbeville, Bateman & Dingee et al 1.. dry
Harmel, L. T. Burns et al 3 10
Hamilton-B, Fain-McGaha Oil Corp. 1.. dry
Roach, C. W. Gilliland 5 ..... dry
Rogers-B, C. W. Gilliland 1 ..... dry
Symank, C. W. Gilliland et al 3 12
Richardson, J. H. Massie 12 45
Justice-C, McLaughlin Bros. 1 ..... dry
Campbell, Pet. Producers Co. et al 1 .. dry
Turbeville-H, L. T. Burns 1 ..... dry
Turbeville, J. B. Baker, Jr., 2 ..... dry
Covington, R. I. Carter 1 ..... dry
Anderson-C, Fain-McGaha Oil Corp. 2.. dry
Portwood-D, Fain-McGaha Oil Corp. 1.. dry
Brown, Golding & Cochran 6 70
Lauster, Golding-Cochran and Dixie 1 .. dry
Munroe et al, Geo. L. Pace et al 1 ..... dry
Farmer et al, Riner & Omohundro 1 18
Harmel, Virgil Oil & Gas Co. 9 37
Prideaux, Wilson & Russell 12 8

Completions 49
Production 842
Dry holes 30

BAYLOR COUNTY

Portwood, Silk 1 ..... dry
Portwood, Consolidated Oil Co. et al 18 247
Portwood-Left, Barnsdall Oil Corp. 3 .. dry
Portwood-Harry, Grisham and Barnsdall 4 72
Portwood-A, Silk 1 ..... dry

Completions 5
Production 319
Dry holes 3

BROWN COUNTY

Armstrong, Anzac Oil Corp. et al 1 ..... dry
Shore, Green et al 1 ..... dry
Dickens, Gunn Prod. Co. 1 4
Dickens, Gunn Prod. Co. 2 12
Hickman, Kewanee Oil & Gas Co. 26 .. 109
Aynes, Sawyer et al 1 ..... dry
Suttles, E. L. Smith Oil Co. 1 ..... dry
Hutton, Syndicate Oil Co. 2 ..... dry
Shore, Paramount O. R. Corp. et al 2 .. dry
Boysen, Bishop et al 1 ..... dry
Brooks Smith, Sellers et al 1 ..... gas
Moore, Holder & Heatley 1 ..... dry
Kilgore, Young Bros. & Alexander 2 .. dry
Vardeman, Evans et al 1 ..... dry

Completions 14
Production 125
Dry holes 10
Gas wells 1
Gas production 1,000,000

CALLAHAN COUNTY

Jackson-C, Beams et al 1 8
Cutbirth et al, Colgin & Johnson 1 ..... dry
Hall, John Kleiner 1 ..... dry
Seale Est., Breeman et al 1 ..... dry
Alexander, Lewis Prod. Co. 2 ..... dry
Long, McCarter 1 ..... dry
Finley, Star Drlg. Co. 1 ..... dry
McDonnell, Wakefield & Curry 1 ..... dry
Williams, Goodrum et al 1 ..... dry
Kennard-B, Humble O. & R. Co. 1 ..... gas
Baum, McCowan & Richardson 1 ..... dry
Bond, Grass Roots Oil Co. 1 ..... dry
Kennard-A, Humble Oil & Ref. Co. 1 .. dry
Alexander, Humble, Bateman et al 1 54

Completions 14
Production 62
Dry holes 11
Gas wells 1
Gas production 4,000,000

CLAY COUNTY

Evans et al, R. T. Belcher et al 8 5
Byers & Co., J. F. Merrick et al 4 40

Completions 2
Production 45

COLEMAN COUNTY

Burns, Arcadia Ref. Co. 1 ..... gas
Thate, Fox & Tucker 1 ..... dry
Sealy & Smith, Gutzman & Aldrich 2 .. gas
Bartholomew, Lloyd Oil Corp. 10 50
Rae, Roberts Oil Corp. 2 ..... gas
Holt Est., Coleman Gas & Oil Co. 1 .. gas
Fleming, Fuhrman Pet. Co. 1 ..... dry
Garrett, Joines & Engle 1 ..... dry
Bartholomew, Lloyd Oil Corp. 11 150
Stewardson, Tidal Oil Co. 5 62
W. H. Kingsberry, Wilmott et al 1 ..... dry

Completions 11
Production 262
Dry holes 4
Gas wells 4
Gas production 14,258,000

COMANCHE COUNTY

Slone, McLester Oil Co. 1 ..... dry
Guinn, Anderson et al 1 ..... gas
Fisher, Tex-Wa Oil Co. et al 1 ..... dry
Wiley et al, Humble O. & R. Co. 1 ..... dry

Completions 4
Production 0
Dry holes 3
Gas wells 1
Gas production 1,712,000

COOKE COUNTY

Truebenback, Danciger O. & R. Co. 1 .. dry
Gibson, Leash & McCall 1 ..... dry
Bugg, Deep-Rock Oil Co. et al 1 8
Field & Bowers, Seitz-Comegy & Seits, Inc., 1 ..... dry

Completions 4
Production 8
Dry holes 3

EASTLAND COUNTY

Lyerla, Hoffman & Page Co. 6 34
Gibson, E. C. Howell 1 ..... dry
Word, Lone Star Gas Co. 1 ..... dry
Dillon, Outlaw and Prairie Oil & Gas Co. 1 ..... dry
Parrack, T. P. Coal & Oil Co. 1 124
Jones, Chestnut & Smith Corp. 1 ..... gas
C. H. Fee, Lone Star Gas Co. 75
Hoffer & Grove, Lone Star Gas Co. 1.. gas
Penn, Lone Star Gas Co. 1 ..... gas
Lewis heirs, Texas Development Co. 1.. 10

Completions 10
Production 243
Dry holes 3
Gas wells 3
Gas production 8,813,000

ERATH COUNTY

Cage, Lone Star Gas Co. 3 ..... dry
Mauldin, Associated Prod. Co. 1 ..... gas
Allen, T. P. Coal & Oil Co. 2 ..... dry

Completions 3
Dry holes 2
Gas wells 1
Gas production 134,000

HASKELL COUNTY

T. E. Ballard, Dixie Oil Co. 1 ..... dry

JACK COUNTY

Boyd Bros., F. H. E. Oil Co. 1 ..... dry
Humphries, O. C. Chapin 1 ..... dry
Ezell, Republic Prod. Co. 3 200
Knox Land & Cattle Co., Stump et al 1 dry

Completions 4
Production 200
Dry holes 3

MONTAGUE COUNTY

Crownover, Bridwell Oil Co. 1 ..... dry
Dennis, Bridwell Oil Co. 5 35
McGaughy, Bridwell and Continental 9.. 50
York et al, United Producers Co. 1 .... dry
Cunningham et al, Carter & Rycade 13 30
Hinton, H. E. Crenshaw et al 1 ..... dry
Loy, J. L. King 1 7
Henley, The Texas Company 3 8
Howard, Arkansas Fuel Oil Co. 1 ..... dry

Completions 9
Production 130
Dry holes 4
Gas production 1,000,000

PALO PINTO COUNTY

Hart, Ash Synd. et al 12 ..... gas
Slemmons, Mingus Gas Co. 1 ..... dry

Completions 2
Dry holes 1
Gas wells 1
Gas production 750,000

SHACKELFORD COUNTY

Brewster, King et al 2 ..... dry
Brewster, Stump et al 2 ..... dry
Reynolds-B, Texas Consd. Oil Co. 5 ... dry
J. H. Nail, Sec. 50, Carter Dev. Co. 1 .. dry
Morris & Buie, T. James 1 40
Nail, Sec. 133, States Oil Corp. 1 9
Morris & Buie, Freeman et al 1 191
Brooks, W. B. Holder 1 ..... dry
Dawson et al, Sec. 202, Roeser & Pendleton, Inc., 2 191
Morris & Buie, Sec. 204, Roeser & Pendleton, Inc. 1 40
Morris & Buie, Sec. 205, Roeser & Pendleton, Inc., 1 22
Harvey, T. K. Simmons 4 ..... dry
Herron, Gilman & McMurray 2 100
Brewster, King et al 1 ..... dry

Completions 14
Production 593
Dry holes 7

STEPHENS COUNTY

Cunningham, W. M. Collins 1 6
Newell, T. P. Coal & Oil Co. 10 ..... dry
Longford, Herbert Oil Co. 1 ..... dry
Mitchell-A, Belva Oil Co. 1 7

Completions 4
Production 13
Dry holes 2

THROCKMORTON COUNTY

White, Burton et al 1 ..... gas
Timmons, McKay et al 1 ..... dry

Completions 2
Dry holes 1
Gas wells 1
Gas production 2,500,000

WICHITA COUNTY

Wilkerson et al, Mid-Continent Hold. Corp. 11 10
Sparks, Bridwell Oil Co. 1 ..... dry
Love, Comac Drlg. and Cullum 1 10
Allen-Foster, G. H. Howell 4 20
Taylor, Humble Oil & Ref. Co. 25 100
Overby, Lambert & Trout 2 70
Kemp & Kempner-D, Shappell Oil Co. 1 dry
Neale, Staley & Wynne 1 ..... dry
Waggoner, The Texas Company 381 .. 40
Kemp & Kempner-A, Arkansas Fuel Oil Co. 34 40
Swanson & Gober, C. P. Sheldon 1 ..... dry
Honaker, Walton & Blair 1 20
Kemp & Kempner-A, Arkansas Fuel Oil Co. 33 49
Neale-A, Comac Drlg. Co. and Prairie O. & G. Co. 2 78
Taylor, Humble Oil & Ref. Co. 26 15
Overby, Lambert & Trout 3 110
Honaker, Roden & Benton 1 ..... dry
Neale, Staley & Wynne 2 76
Hodges-A, United Producers Co. 15 81
Waggoner Bros.-C, T. F. Hunter 12 30
Schultz, Steel D. Co. and King Royalty Co. 1 ..... dry
Honaker, Walton & Blair 2 8

Completions 22
Production 757
Dry holes 6

WILBARGER COUNTY

Waggoner, The Texas Company 380 .... dry
Waggoner-Sigler, Atlantic O. P. Co. 14.. 100
Waggoner-C, Bradstreet Co. 7 70
Waggoner-A, Empire Gas & Fuel Co. 23 80
Waggoner-A, Empire Gas & Fuel Co. 24 90
Ayers, Simms Pet. Co. 1 ..... dry
Waggoner-G, Staley-Wynne & Co. 19.... 130
Waggoner, The Texas Company 382 ... dry
Waggoner-F, Venmex Oil Co. 3 ..... dry
Waggoner-K, Bradstreet Co. 1 ..... dry
Waggoner-S, Fain-McGaha Oil Corp. 34. dry
Waggoner-K, Golding-Cochran et al 4... 60
Waggoner-K, Golding-Cochran et al 5 ... dry
Waggoner, Hamilton 1 ..... dry
Waggoner, Independent and Moran 2 ... 20
Waggoner-V, Phillips Pet. Co. 1 35
Waggoner-R, Staley-Wynne & Co. 3 .... dry
Waggoner-P, Waggoner Ref. Co. 12 40
Waggoner-C, Barkley & Meadows 12 ... 100
Waggoner-L, Fain-McGaha Oil Corp. 21. 38
Zipperle, HiLand Oil Co. 1 ..... dry
Waggoner, The Texas Company 385 3

Completions 22
Production 766
Dry holes 10

YOUNG COUNTY

Foster, G. A. Alexander, Jr., 1 ..... dry
Foster, Alexander & Simmons 2 ..... dry
Cooper, Beard & Hammon 1 115
Wolf, Bolin & Lindsey 8 40
Lowe, C. W. Carey et al 4 8
Hearne, G. B. Chandler et al 1 ..... dry
Junker & Benson, G. W. Cooper et al 3 70
Dunnagan, F. P. Cullum 1 ..... dry
Wilson, Daniels & Adair et al 2 ..... dry
Dahse, Frank Darr 1 ..... dry
Dunnagan, R. P. Dorian 1 ..... dry
Lowe, Duffield and Howard Pet. Co. 1 dry
Russell, C. H. Featherstone et al 1 ... dry
Carpenter, Fisher & Staley 1 105
Ward, R. D. Garrett 1 ..... dry
Morrison, T. L. Griffin et al 1 ..... dry
Bullock, V. L. Grisham 1 ..... dry
Thomas, G. B. Hamilton 1 ..... dry
Hausley, Hill & West Drlg. Co. et al 1 dry
Jones, Holbrooks & Woods 1 ..... dry
Taack, Howard Pet. Co. 1 2
Benson-A, Hunter Oil Corp. 5 65
Bloodworth-B, T. F. Hunter et al 1 105
Husted, F. P. Hynes 1 ..... dry
Boley, W. H. Junker 2 10
Lowe, Panhandle Ref. Co. 4 16
Ward, Panhandle Ref. Co. 1 ..... dry
Dunagan, Perkins & Cullum 12 60
Keith-B, Riner & Omohundro 1 ..... dry
Hawkins, Smith-Archer Drlg. Co. 1 ... dry
Corley, W. R. Stafford 1 ..... dry
Routon, Staley and Wynne & Co. 1 ... dry
Hill, D. L. Wolf 6 10
Jarnigan, Independent Oil & Gas Co. 3 248
Dunagan, Adams-Smith et al 1 ..... dry
Jeffery, G. A. Alexander, Jr., 1 ..... dry
Alexander, Allen & Crowell 1 ..... dry
Leberman, Benson Bros. 1 ..... dry
Davis, the Bonner Oil Co. 7 ..... dry
Hall, Brazelton Bros. et al 1 ..... dry
Knox, Bridgeport Mch. Co. 1 ..... dry
Haley, Bridwell Oil Co. 1 ..... dry
Lowe, C. W. Carey et al 5 5
Wilson, Daniels & Adair et al 1 30
Hennig, R. W. Dilday et al 1 ..... dry
Dunn, Fain-McGaha Oil Corp. 1 ..... dry
Hill, P. Fowler et al 3 65
Mercer, N. D. Goldsmith et al 1 ..... dry
Wolf, L. P. Hammond 1 230
Benson-A, Hunter Oil Corp. 6 25
Bloodworth-A, Hunter Oil Corp. 2 30
Bloodworth-B, T. F. Hunter et al 2 611
Bailey, F. P. Hynes 1 ..... dry
Wilson, Morris & Dunn, trustee, 2 ..... dry
Daniel, Nix & Dale 2 34
Hutchings, Panhandle Ref. Co. 1 ..... dry
Dunagan, Perkins & Cullum 13 80
Atchley, Ray-Featherstone et al 1 ..... dry
Graham, Remington & Terrell 1 200
Larimore et al, E. R. Riggs 5 810
Garrett-A, Shappell Oil Co. 7 ..... dry
Garrett-B, Shappell Oil Co. 4 ..... dry
Bloodworth, Staley-Wynne & Kruger 1 120
Deiter, O. R. Tattenhaha 1 ..... dry
Colley, Ridwell & Riggs 1 ..... dry
Larimore et al, Wm. Vandivert et al 1 288
Terrell Est.-A, R. J. Watson 1 ..... dry
Hamilton, Western Prod. Co. 1 ..... dry
Leberman, D. L. Wolf 1 ..... dry
Donnell, Gordon & Morris 1 40
Kisinger-A, Shaw Oil Corp. 3 768
Donnell, Transcontinental Oil Co. 1 .. gas
Davis, Bonner Oil Co. 8 6
Larimore, Brazelton et al 1 264
Shaw Bros., Campbell Oil Corp. 1 ..... dry
Deats, Flowers & Barkley 1 ..... dry
Larimore et al, W. B. Hamilton 2 260
Thomas, G. B. Hamilton 2 ..... dry
Bloodworth-A, T. F. Hunter Corp. 3.... 60
Holder, Jacob Oil & Gas Co. 1 ..... dry
Logan, C. J. Kliner 2 ..... dry
Larimore, et al, Geo. Mollenkoph 1 ... dry
Hall, Nimrod Oil Co. 5 ..... dry
Lowe, Panhandle Ref. Co. 5 ..... dry
Hall, A. H. Parks et al 3 10
Dunagan, Perkins & Cullum 14 50
Pringle, Preston Bros. 1 ..... dry
Bulock, Remington-Nelson 1 ..... dry
Terrell, E. M. Remington 1 ..... dry
Larimore et al, E. R. Riggs 6 1104
Larimore et al, E. R. Riggs 7 1193
Garrett-A, Shappell Oil Co. 8 ..... dry
Wilson, H. R. Stastney 1 ..... dry
McBrayer et al, Wooten & Reed 1 ..... dry
Jordan, Wooten & Reed 1 ..... dry
Jarnigan-B, Atlantic and Christie 2 ... 800
Jarnigan, Independent Oil & Gas Co. 4 67
Stowe, Bridwell Oil Co. 1 ..... dry
Junker & Benson, Geo. Cooper et al 4.. 10
Benson, L. H. Cullum 1 ..... dry
Moore et al, T. F. Hunter 1 ..... dry
McClatchey, T. P. Hynes 1 ..... dry
Bailey, King Royalty Co. and Heydrick 2 70
Belknap Coal Co., C. J. Kliner 1 ..... dry
Larimore et al, Panhandle Ref. Co. 1... 300
Larimore et al, Panhandle Ref. Co. 2... dry
Logan, Perkins & Cullum 1 ..... dry
Perkins, C. P. Sheldon 1 ..... dry
Barnett et al, Willis & Terrell 1 ..... dry
Ware-A, Nash & Windfohr 3 100
Payne, Scott & Nance 7 40

Completions 111
Production 8524
Dry holes 67
Gas wells 1
Gas production 4,000,000

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Brewster	1	0	1	0
Crane	3	412	0	0
Crockett	2	65	1	0
Ector	13	7,213	0	0
Fisher	1	864	0	0
Glasscock	2	2,160	0	0
Howard	1	432	0	0
Hudspeth	1	0	1	0
Irion	3	45	2	0
Jones	2	0	2	0
Loving	2	1,048	0	0
Pecos	16	1,040	2	0
Reagan	1	1,501	1	0
Reeves	2	0	2	0
Runnels	1	0	1	0
Taylor	2	125	0	0
Upton	3	220	1	0
Ward	3	301	0	0
Winkler	1	512	0	0
Total June	60	15,938	14	0
Total May	89	31,319	25	0
Difference	29	15,381	11	0

Summary of Rigs and Wells Drilling

Crane	3	0	13	16
Crockett	2	1	1	4
Ector	5	2	20	27
Fisher	1	1	4	6
Glasscock	0	4	12	16
Howard	7	5	9	21
Irion	2	4	2	8
Jones	0	0	2	2
Pecos	14	9	26	49
Reagan	0	0	9	9
Upton	2	1	2	5
Ward	2	6	8	16
Winkler	0	4	2	6
Miscellaneous counties	8	39	38	85
Total June	46	76	148	270
Total May	53	73	146	272
Difference	7	3	2	2

WELLS COMPLETED

BREWSTER COUNTY

S. P. Skinner, E. L. Chapman 2 ..... dry

CRANE COUNTY

Cowden Bros. & Co., C. C. Duffey et al 9 240
University, T. P. Coal & Oil Co. 3 52
J. T. McElroy, Gulf Prod. Co. 75 120

Completions 3
Production 412

CROCKETT COUNTY

J. M. Shannon, Trans-Texas Oil Co. 2.... 65
Pecos River Bed, Lewis & Daniels 1 ... dry

Completions 2
Production 65
Dry holes 1

ECTOR COUNTY

University-A, Skelly Oil Co. et al 2.. 811
State, Gulf Prod. Co. 2 1027
University-B, Cosden Oil Co. 2 650
University-T, Landreth Prod. Corp. 3...105
University, Simms Pet. Co. et al 1 (drilled deeper from 3,670 feet) 1110
State-A, Gulf Prod. Co. 2 620
University-B, Cosden Oil Co. 3 331
Kloh & Rumsey-D, Humble O. & R. Co. et al 8 154
Kloh & Rumsey-D, Humble O. & R. Co. et al 9 984
R. L. York, Humble O. & R. Co. et al 7 309
W. E. Connell, The Texas Co. et al 7.. 320
Kloh & Rumsey, Cosden Oil Co. 2 430
University-S, Landreth Prod. Corp. 3.... 362

Completions 13
Production 7213

FISHER COUNTY

Willingham, Cranfill & Reynolds 2 864

GLASSCOCK COUNTY

R. C. Coffee, Amerada Pet. Corp. 3 ...1260
J. J. Phillips, Schermerhorn Oil Co. 3.. 900

Completions 2
Production 2160

HOWARD COUNTY

Kloh et al, Plymouth Oil Co. 5 432

HUDSPETH COUNTY

Moore, Lockhart & Co. 1 ..... dry

IRION COUNTY

Fayette Tankersley, P. I. Fox & Wm. R. Thorsen 1 45
Fayette Tankersley, P. I. Fox & Wm. R. Thorsen 3 ..... dry
J. M. Nutt, Straughn & Texannati Oil Co. 1 (water well) ..... dry

Completions 3
Production 45
Dry holes 2

JONES COUNTY

King, Midtex Oil & Gas Co. 1 ..... dry
Teaff, Phillips Pet. Co. 1 ..... dry

LOVING COUNTY

Wheat & Ramsey, L. E. Lockhart 1.. 424
Reagan & McElvain, California Co. 1 .. 624

Completions 2
Production 1048

PECOS COUNTY

University, Cromwell, Tanner & Ellis 1 dry
J. H. Tippett-A, Southern Crude O. P. Co. 6 118
J. H. Tippett-Kirby, Cardinal Oil Co. 1 30
J. H. Tippett-Kirby, Cardinal Oil Co. 3 150
Mrs. F. E. Forborg, Dixie Oil Co. 5 180
University, Henshaw Bros. et al 2 140
L. L. Byrne, Messenger et al 1 50
John T. Sellman, Transcontinental Oil Co. et al 3 7
Myrtle Sellman-A, Transcontinental Oil Co. et al 1 40
W. T. Shearer, Walsh-Sturm & Keller 1 (cellar temporarily abandoned) ..... dry
W. T. Shearer, Atlantic O. P. Co. 1 20
Jasper Co. Realty Tr. Co., California Co. 1 3
Jasper Co. Realty Tr. Co., Buell & Hagan and Independent Oil & Gas Co. 1 .. 2
J. H. Tippett, Dixie Oil Co. 2 51
I. M. Ramsey, Phillips Pet. Co. 6 162
Mrs. M. A. Smith-D, Shell Pet. Corp. 6 87

Completions 16
Production 1040
Dry holes 2
Gas production 7,700,000

REAGAN COUNTY

Sawyer Cattle Co., Hagan-Emch and Amerada 1 ..... dry
Group 1 University, Texon Oil & Land Co. 2-B 1501

REEVES COUNTY

A. A. Eddins, David R. Thompson 1 .. dry
A. A. Kinney et al, Exploration Co. 1 .. dry

RUNNELS COUNTY

Johnson, Gibson & Johnson et al 1 .... dry

TAYLOR COUNTY

Cody, A. H. Gibson et al 1 45
Lindsey, Mid-Continent Pet. Co. 1 75

Completions 2
Production 120

UPTON COUNTY

Ed. S. Hughes, Pure Oil Co. ..... dry
W. A. Chaney, Eppenauer Drlg. Co. 1 .. 220
R. Ricker-B, Humble Oil & Ref. Co. 1 .. dry

Completions 3
Production 220
Dry holes 2

WARD COUNTY

G. W. O'Brien et al, Sid Richardson et al 2 290
F. T. Robeson, Cranfill & Reynolds 1 .. 3½
Mrs. J. H. Boogher, C. C. Dearborn et al 1 8

Completions 3
Production 301½

WINKLER COUNTY

T. G. Hendrick T-67-2-D, Southern Crude Oil Pur. Co. 6 512

PANHANDLE FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	7	405	1	2
Cochran	1	0	1	0
Gray	30	21,626	2	0
Hartley	1	0	0	1
Hutchinson	10	747	1	2
Moore	2	0	0	2
Potter	1	0	0	1
Wheeler	13	250	0	11
Total June	65	23,028	5	19
Total May	73	39,386	7	17
Difference	8	16,358	2	2

Summary of Rigs and Wells Drilling

County—	Rigs	Wells shut down	Wells drlg.	Ttl.
Carson	6	8	17	31
Gray	24	8	73	105
Hutchinson	4	3	16	23
Moore	2	1	3	6
Wheeler	6	4	5	15
Miscellaneous counties	1	8	6	15
Total June	43	32	120	195
Total May	41	30	117	188
Difference	2	2	3	7

WELLS COMPLETED
CARSON COUNTY

C. R. Garner et al, McClintock et al 2 .. 175
J. L. Noel, Prairie Oil & Gas Co. 2 65
H. Schafer, Skelly Oil Co. 19 60
W. H. Fuqua, Empire Gas & Fuel Co 3 gas
B. F. Block, Gulf Prod. Co. 2 105
M. B. Pickens, Phillips Pet. Co. 1 ..... dry
J. M. Sanford, Texas Interstate P. L. Co. 1 ..... gas

Completions 7
Production 405
Dry holes 1
Gas wells 2
Gas production 23,000,000

COCHRAN COUNTY

C. C. Slaughter, Westbrook et al 1 ..... dry

GRAY COUNTY

W. M. Castleberry, Cockrell-McIlroy 1 .. 70
J. C. Vallmert, McIlroy Oil Co. 1 130
J. H. Palmer, McMan Oil & Gas Co. 9 .. 190
M. L. Langham, Prairie Oil & Gas Co. 2 55
P. A. Worley et al (Leycomb), Prairie O. & G. Co. et al 1 1110
Combs & Worley, Wilcox-Pampa Oil Co. 14 1508
Lincoln-Saunders, Shamrock Oil & Gas Co. 5 520
W. C. Archer-B, Empire Gas & Fuel Co. 1 400
A. C. Shields, Empire Gas & Fuel Co. 1 240
J. A. Hood, Follett Pet. Corp. 1 ..... dry
Combs & Worley, Humble O. & R. Co. 3 1860
J. E. Wright, Magnolia Pet. Co. 8 170
J. E. Wright-Wood, Phillips Pet. Co. 3. 380
Combs-Worley, Wilcox-Pampa Oil Co. 12 1383
E. Key, Clayton-Key Oil Co. 2 100
Finley-Brown, Continental Oil Co. 6 270
M. E. Jackson, Empire G. & F. Co. 1 .. 220
J. E. Wright, Magnolia Pet. Co. 9 680
J. E. Wright-Wood, Phillips Pet. Co. 4 .. 2820
Vaughan, So. Pet. Exp. Co. 1 325
Combs & Worley, The Texas Co. 7 600
J. E. Wright, The Texas Co. 3 450
Combs & Worley, Wilcox-Pampa Oil Co. 11 100
G. H. Saunders, Stover & Shell 1 10
J. E. Williams, The Texas Co. 7 1005
A. Chapman, W. Wilson, trustee 1 75
J. M. Saunders, Big Gray Oil Co. 2 .... dry
R. J. Sallor, Cockrell McIlroy 1 505
J. B. Bowers, Phillips Pet. Co. 1 700
Combs & Worley, Wilcox-Pampa Oil Co. 15 5950

Completions 30
Production 21,626
Dry holes 2
Gas wells 9
Gas production 43,500,00

HARTLEY COUNTY

F. P. Feltz, Dana Oil & Gas Co. 1 .... gas
Gas production 13,500,000

HUTCHINSON COUNTY

Johnson Bros., Alexander et al 1 25
Johnson Bros., Dixon Creek Oil Co. 1 .. 184
H. C. Pitcher-A, Smith & McDaniel 1 .. 275
R. F. Cheatham, Dixon Creek Oil Co. 6 200
Johnson Bros.-Burl, Phillips Pet. Co. 1 .. 15
M. E. Dunnaway, Texas State Oil Co. 1 dry
J. M. Sanford, Alamoso Oil Co. 4 ..... gas
Johnson Bros.-E, Continental Oil Co. 1 gas
J. M. Sanford, Texarado Oil Co. 2 40
E. Cockrell, The Texas Co. et al 1 ..... gas

Completions 10
Production 747
Dry holes 1
Gas wells 2
Gas production 64,000,000

MOORE COUNTY

C. L. Killgore, Gulf Prod. Co. 1 ..... gas
J. M. Shelton-A, Red River Gas Co. 1 .. gas

Completions 2
Gas production 71,000,000

POTTER COUNTY

R. B. Masterson-N, Canadian River Gas Co. 1 ..... gas
Gas production 20,000,000

WHEELER COUNTY

J. H. Jackson, Four Leaf Drlg. Co. 1 .. 150
Nickell, Lone Star Gas Co. 1 ..... gas
L. Close, Murchison & Fain 13-A ..... gas
Parsons, Murchison & Fain 2 ..... gas
I. Close, Murchison & Fain 14 ..... gas
Parson, Murchison & Fain 3 ..... gas
M. Brown, Wischkamper et al 2 ..... gas
J. W. Curry, Wischkamper et al 3 ..... gas
A. H. Finley, Lone Star Gas Co 1 ..... gas
W. E. Bentley, Piney Oil & Gas Co. 3 .. 100
O. Hoshor, Upham Gas Co. 1 37
I. Close, Murchison & Fain 15 ..... gas
G. L. Close, Murchison & Fain 1 ..... gas

Completions 13
Production 250
Gas wells 11
Gas production 420,000,000

SOUTHWEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Dobrowolski	2	22	0	0	1	1	1
Pettus	2	1,600	0	0	11	1	12
Bruner	2	10,150	0	0	2	1	3
Buchanan	2	25	1	0	0	1	1
Lytton Spgs.	1	0	1	0	0	0	0
Darst Creek	12	8,740	2	0	9	2	11
Nursery	1	0	0	1	0	0	0
Mirando	23	1,935	8	2	23	31	54
Miscellaneous	18	0	16	2	48	97	145
Total June	63	22,472	28	5	93	134	227
Total May	82	59,891	49	2	56	114	170
Difference	19	37,419	21	3	37	20	57

WELLS COMPLETED
DOBROWOLSKI POOL—BEXAR COUNTY

Sandimeyer, Penn-Tex Oil Co. 1 10
L. Sandemer, Penn-Tex Oil Co. 2 12

PETTUS FIELD—BEE COUNTY

J. J. McKinney, Humble O. & R. Co. 3. 800
Geo. Ray, Union Prod. Co. 9 800

BRUNER POOL—CALDWELL COUNTY

H. W. New, Humble O. & R. Co. 4 ..10,000
T. Briscoe, Humble O. & R. Co. 7 150

BUCHANAN POOL—CALDWELL COUNTY

Medlin, Buchanan-Danciger 2 ..... abd
W. T. Cude, Buchanan-Danciger 2-A .. 25

LYTTON SPRINGS—CALDWELL COUNTY

Strawn, Cranfill-Reynolds 3 ..... abd

DARST CREEK—GUADALUPE COUNTY

Knoblock, Empire Gas & Fuel Co. 3 .. 600
Denman, W. H. Gee 1 ..... abd
Dix-McKean, Gulf Prod. Co. 2-A 1800
D. D. Baker, Humble O. & R. Co. 2 .. 800
D. D. Baker, Humble O. & R. Co. 6 .. 600
Yates Wilson, Humble O. & R. Co. 3 .. 700
Manform, Sun Oil Co. 2 ..... abd
Knoblock, Sun Oil Co. 8 1700
Dallas Wilson, The Texas Company 2.. 600
Dallas Wilson, The Texas Company 3 .. 950
Posey, The Texas Company 4 840
Posey, The Texas Company 5 150

Wells completed 12
Production 8740
Dry 2

NURSERY POOL—VICTORIA COUNTY

Jay J. Welder, Humble O. & R. Co. A-3 gas

JENNINGS POOL—ZAPATA COUNTY

Gracia, John J. O'Hern 1 240
Cuellar, O. W. Killam 19-B 100
Cuellar, O. W. Killam 25 300
Trevino, Livingston & Twiss 1 50
Cuellar, Magnolia Pet. Co. 3 ..... abd
M. Trevino, Nordan & Morris 1-B 100
I. G. Trevino, Nordan & Morris 1-A 300
Montemayor, G. F. Owen 2 25
Gracia, O. & A. Co. 2 ..... gas
Cuellar, W. R. Shankle 1 150
Trevino, Trinity Drillers (S.R.C.Co.) 1.. 100
F. Cuellar, Trinity Drillers (S.R.C.Co.) 1 300

ROMA POOL—STARR COUNTY

V. C. De Guerra, The Texas Co. 1-B .. abd

COLE POOL—WEBB COUNTY

S. Benavides, South Texas Prod. Co. (Fansler) 1 ..... abd
R. Benavides, French Oil Corp. 1 100
Bruni, O. W. Killam 18 ..... gas
S. Benavides, Morris Drlg. Co. 2 ..... abd
R. Benavides, French Oil Corp. 2-A .. 150

AVIATOR POOL—WEBB COUNTY

A. M. Bruni, O. W. Killam 1-V ..... abd

COLE POOL—DUVAL COUNTY

S. Benavides, F. S. Bain-Miller I. Shaw 1 ..... abd

WILDCATS—DUVAL COUNTY

Welder Wood, Southern Oil Co. 1 ..... abd
John Dunn, Southern C. O. P. Co. 1 .. abd

Wells completed 23
Production 1935
Dry 3
Gas 2
Gas production 82,000,000

KOHLER POOL—DUVAL COUNTY

Kohler, Humble O. & R. Co. 45 20

MISCELLANEOUS WILDCATS

Bastrop County—
J. Spooner, Pacific O. & G. Co. 3 ..... abd

Bexar County—
Story, J. M. Russell 1 ..... abd
C. N. Cassin, Dingman Drlg. Co. 7 .... abd

Bee County—
F. O. Massengale, Rowan & Tong 1 .. abd

Caldwell County—
Riddle, Brousche & Wilson 1 ..... abd

Gonzales County—
C. Martin, Atibus et al 1 ..... abd

Guadalupe County—
J. Seligman, Tidal Oil Co. 1 ..... abd
W. M. Dollie, Transcontinental Oil Co. 1 abd

Kinney County—
Jim Clamp, Mardon Oil Co. 2 ..... abd

Kendall County—
Willie Werner, P. B. Sterling 1 ..... abd
W. Askey, Seaboard O. & G. Co. 1 .... abd

LaSalle County—
Beckwith, Salt Lake City Pet. Co. 1 .. abd

Medina County—
Whitesides, Pearson Oil Co. 1 ..... abd
R. J. Taylor, R. M. Perkins 1 ..... abd

Jim Wells County—
G. Ferris, E. W. Ogden 1 ..... abd

Zavala County—
J. K. Pryor, Ed Anglin 4 ..... gas
Pryor, Ike Pryor 1 ..... gas
Townsite of Delmonte, Thos. T. Taylor 1 ..... abd

Wells completed 18
Production 0
Dry 16
Gas 2
Gas production 5,250,000

EAST TEXAS

	Comp.	I.P.	Dry	Gas*	Rgs.	Drg.	Ttl.
Bowie	0	0	0	0	0	1	1
Camp	0	0	0	0	1	0	2
Cass	0	0	0	0	1	0	1
Harrison	1	0	0	1	1	1	2
Marion	1	0	1	0	1	1	2
Panola	3	0	0	3	2	3	5
Red River	1	0	1	0	0	2	2
Shelby	0	0	0	0	0	2	2
Total June	6	0	2	4	6	11	17
Total May	2	0	0	2	3	12	15
Difference	4	0	2	2	3	1	2

*Gas production: Harrison, 5,514,000 feet; Panola, 3,550,000 feet; total, 9,064,000 feet.

WELLS COMPLETED
MARION COUNTY

Jackson Gray Survey; Susie Chapman, H. L. Hunt 1 ..... dry

HARRISON COUNTY

J. Womack Survey; Gibson, Ark.-La. Pipe Line Co. 2 ..... gas

Gas production 5,514,000

PANOLA COUNTY

E. F. Mitcheson Survey; Werner, Ark.-La. Pipe Line Co. 12 ..... gas
James Shadoin Survey; Caldwell, Calatex O. & G. Co. 3 ..... gas
B. C. Jordan Survey; Crenshaw, D. Thomason 14 ..... gas

Production 3,550,000

RED RIVER COUNTY

Joseph Wagley Survey; W. R. Garland, Shad Harper et al 1 ..... dry

EAST CENTRAL TEXAS

Summary of Field Operations for June

County—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Anderson	1	0	1	0	0	4	4
Angelina	0	0	0	0	1	0	1
Cherokee	0	0	0	0	0	0	0
Delta	0	0	0	0	0	1	1
Ellis	0	0	0	0	1	0	1
Freestone	1	0	1	0	0	0	0
Grimes	0	0	0	0	0	0	0
Henderson	0	0	0	0	1	2	3
Hill	1	0	1	0	0	2	2
Hopkins	1	0	1	0	0	0	0
Lamar	1	0	1	0	0	0	0
Limestone	2	0	2	0	0	1	1
Navarro	0	0	0	0	2	2	4
Rains	0	0	0	0	0	1	1
Rusk	0	0	0	0	0	2	2
San Augustine	1	0	1	0	0	0	0
Smith	0	0	0	0	1	1	2
Van Zandt	16	65,000	2	0	6	22	28
Woods	2	0	2	0	0	1	1
Ttl. June	26	65,000	12	0	12	39	51
Ttl. May	50	53,057	22	1	4	25	29
Difference	24	11,943	10	1	8	14	22

WELLS COMPLETED
ANDERSON COUNTY

J. C. Collier, Humble O. & R. Co. 1 .. abd

FREESTONE COUNTY

Fee, Killiam & Phillips 1 ..... abd

HILL COUNTY

Crain, Ballard et al 1 ..... abd

HOPKINS COUNTY

Millholen, L. Wentz & Atlantic 1 ..... abd

LAMAR COUNTY

Johnson, Saudenheim et al 1 ..... abd

LIMESTONE COUNTY

C. O. Wright, Powell & McKinney 1 .. abd
Zeph Anghn, Ursy et al 1 ..... abd

SAN AUGUSTINE COUNTY

Stanley, Pukrell et al 1 ..... abd

WOODS COUNTY

Sessions, The Texas Company 1 ..... abd
J. L. Gilbreath, The Texas Co. 1 ..... abd

VAN ZANDT COUNTY

Ledbetter, Cranfill-Reynolds Co. 2 .... abd
Carter, L. B. Pruitt and Imperator Oil Co. 1 ..... abd
M. R. Bolin, Pure Oil Co. 1 5000
A. D. Clark, Pure Oil Co. 1 3000
Morris, Pure Oil Co. 1 5000
A. R. Tunnell, Pure Oil Co. 2 2500
Thompson, Pure Oil Co. 4 5000
J. T. Thompson, Pure Oil Co. 5 5000
J. T. Thompson, Pure Oil Co. 6 2000
R. V. White, Pure Oil Co. 1 3000
Mrs. C. W. White, Pure Oil Co. 1 1500
Wells, Pure Oil Co. 3 3000
R. L. Wells, Pure Oil Co. 1 7500
I. W. Thompson, Sun Oil Co. 2 15,000
E. L. Fowler, Shell Pet. Corp. 5 2500
L. P. Tunnell, Shell Pet. Corp. 5 5000

Completions 26
Production 65,000
Abandoned 12

GULF COAST FIELDS

SOUTHEAST TEXAS

	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Barbers Hill	10	11,729	1	0	4	25	29
Batson	2	0	2	0	0	1	1
Big Creek	0	0	0	0	0	2	2
Blue Ridge	3	1,035	0	0	0	4	4
Boling	0	0	0	0	2	0	2
Clay Creek	0	0	0	0	0	2	2
DeWalt	1	30	0	0	0	2	2
Esperson	2	200	1	0	1	5	6
Fannett	0	0	0	0	0	2	2
Goose Creek	1	100	0	0	0	1	1
Hankamer	1	120	0	0	1	2	3
High Island	0	0	0	0	0	2	2
Hull	1	0	1	0	0	3	3
Humble	6	3,900	1	1	1	9	10
Liberty	1	40	0	0	0	2	2
Lost Lake	0	0	0	0	0	2	2
Nash	0	0	0	0	0	2	2
N. Dayton	1	60	0	0	0	4	4
Orange	0	0	0	0	0	0	0
Orchard	2	1,550	0	0	0	2	2
Pierce J'n't'on	2	70	0	0	0	3	3
Port Neches	0	0	0	0	0	3	3
Raccoon Bend	3	959	0	0	2	4	6
Refugio	14	3,150	2	2	6	42	48
Saratoga	2	17	0	0	0	2	2
Sour Lake	0	0	0	0	0	1	1
Spindletop	7	2,428	3	0	0	8	8
Miscellaneous	5	0	5	0	2	33	35
Ttl. June	64	25,388	16	4	19	168	187
Ttl. May	98	36,813	28	3	19	160	182
Difference	34	11,425	12	1	0	8	5

SOUTH LOUISIANA

Anse La Bute	1	0	0	0	0	1	1
Bayou Bou'lon	0	0	0	0	0	2	2
Bayou Blue	1	0	1	0	1	1	2
Edgerly	2	48	0	0	0	1	1
Hackberry	5	200	3	0	1	6	7
Jennings	3	93	1	0	1	1	2
Lockport	1	280	0	0	3	4	7
Port Barre	1	50	0	0	0	4	4
Sorrento	0	0	0	0	0	0	0
Starks	0	0	0	0	0	1	1
Sulphur	1	2,000	0	0	0	3	3
Sweet Lake	0	0	0	0	0	1	1
Vinton	2	3,200	1	0	0	3	3
Miscellaneous	4	0	4	0	5	23	28
Ttl. June	21	5,871	10	0	11	51	62
Ttl. May	26	8,973	14	0	8	39	47
Difference	5	3,102	4	0	3	12	15
Ttl. Gulf Coast	85	31,259	26	4	30	219	249
Ttl. May	124	45,786	42	3	27	199	226
Difference	39	14,527	16	1	3	20	23

GULF COAST COMPLETIONS
SOUTH TEXAS

BARBERS HILL—CHAMBERS COUNTY

Gulf-Fisher, Mills Bennett Prod. Co. 1..3200
Wilburn, Mills Bennett Prod. Co. 4 50
Wilburn, Gulf Production Co. 3 1744
Wilburn, Gulf Production Co. 4 240
A. E. Barber, Humphreys Corp. 1-F 4250
Kirby, Humphreys Corp. 2-H ..... abd
Woodward, McAlbert Oil Co. 6 500
Wilburn Fee, Sun Oil Co. 6 140
J. Wilburn, Sun Oil Co. 5 105
J. Wilburn, Sun Oil Co. 7 1500

Completions 10
Production 11,729
Abandoned 1

BATSON—HARDIN COUNTY

Carlton, Ada Belle Oil Co. 137 ..... abd
Middlebrook-Ashe, Ada Belle Oil Co. 138 abd

BLUE RIDGE—FORT BEND COUNTY

Blakely, Blakely & Means 2 900
West-Schenck, Humphreys Corp. 5 100
Blakely, Sinclair Oil & Gas Co. 4 35

Completions 3
Production 1035

DeWALT—FORT BEND COUNTY

Nelson, Humble Oil & Refg. Co. 10 30

ESPERSON—LIBERTY COUNTY

Esperson, Cranfill-Reynolds 9 ..... abd
Esperson, Cranfill-Reynolds 12 200

Completions 2
Production 200
Abandoned 1

GOOSE CREEK—HARRIS COUNTY

Stateland Producers, Gulf Prod. Co. 12 100

HANKAMER—LIBERTY COUNTY

Boty, Gulf Production Co. 6 120

HULL—LIBERTY COUNTY

Dolbear, Republic Prod. Co. 116 ..... abd

HUMBLE—HARRIS COUNTY

Williams, Humble Oil & Refg. Co. 12.. 250
Cezeaux, M. La Rue, trustee 1 50
Wheeler & Pickins, T. P. Lee 2 1500
Bender, Sun Oil Co. 6 2100
House, The Texas Company 24 ..... abd
Wheeler & Pickins, The Texas Co. 22.. gas

Completions 6
Production 3900
Abandoned 1
Gas wells 1

LIBERTY—LIBERTY COUNTY
Mitchell, Sun Oil Co. 5 46

NORTH DAYTON—LIBERTY COUNTY
Gulf, V. H. Borsodi 1 60

ORCHARD—FORT BEND COUNTY
Moore, Gulf Production Co. 21 50
Moore, Gulf Production Co. 22 1500

Completions 2
Production 1550

PIERCE JUNCTION—HARRIS COUNTY
Prudential, Marland Oil Co. 2 50
Settegast, Rio Bravo Oil Co. 18-A 20

Completions 2
Production 70

RACCOON BEND—AUSTIN COUNTY
Sherrill, Humble & Valley 4 353
Walton, Humble & Valley 8-A 551
Thompson, Humble & Valley 7 55

Completions 3
Production 959

REFUGIO—REFUGIO COUNTY
Kay, Houston Oil Co. 1 500
Ryalls, Houston Oil Co. 2 ..... abd
Sitterle, Houston Oil Co. 1 700
Mercy Academy, Independent Oil & Gas Co. 1 75
Helen Reilly, Independent Oil & Gas Co. 1 200
Tiny Hyser, Independent Oil & Gas Co. 1 110
Moss, Mission Drlg. Co. of Texas 1 .... gas
Cable, Rutherford Traylor Oil Co. 2 .. 550
Lambert, Union Prod. Co. 2 15
Lambert, Union Prod. Co. 3 ..... abd
Mitchell, Union Prod. Co. 3 ..... gas
Morgan Shelly, Union Prod. Co. 4 800
Powers, Union Prod. Co. 3 ..... gas
Cable, Saxet Oil Co. 3 200

Completions 14
Production 3150
Abandoned 2
Gas 3

SARATOGA—HARDIN COUNTY
Cotton, Rio Bravo Oil Co. 84 14
Cotton, Rio Bravo Oil Co. 84-A 3

Completions 2
Production 17

SPINDLETOP—JEFFERSON COUNTY
Fee, Yount Lee Oil Co. 15 ..... abd
Gladys, Yount Lee Oil Co. 32 68
Gladys, Yount Lee Oil Co. 45 ..... abd
McFaddin, Yount Lee Oil Co. 51 640
McFaddin, Yount Lee Oil Co. 96 40
McFaddin, Yount Lee Oil Co. 133 ..... abd
McFaddin, Yount Lee Oil Co. 134 1680

Completions 7
Production 2428
Abandoned 3

MISCELLANEOUS TEXAS
Grimes County—
Rossi, John Deering et al 1 ..... abd
Harris County—
Minnetex, Humble Oil & Ref. Co. 2 .... abd
Sladous, Humble Oil & Ref. Co. 1 ..... abd
Haney, Martin-Drake-Jones 1 ..... abd
Johnke, Mid-Kansas Oil & Gas Co. 1 .. abd

Completions 4
Production 0
Abandoned 4

WELLS COMPLETED
SOUTH LOUISIANA
BAYOU BLUE—IBERVILLE PARISH
Wilbert, Standard Oil Co. 6 ..... abd
EDGERLY—CALCASIEU PARISH
Moore, Green Oil Co. 7 40
Moore, Green Oil Co. 10 8

Completions 2
Production 48

HACKBERRY—CAMERON PARISH
Caldwell, Calcasieu Oil Co. 5 ..... abd
Duhon, Duhon Oil & Mineral Co. 1 .... abd
J. H. Duhon, Sun Oil Co. 1 150
Duhon, Yount Lee Oil Co. 1 50
School, Yount Lee Oil Co. 10 ..... abd

Completions 5
Production 200
Abandoned 3

JENNINGS—ACADIA PARISH
Conklin, Cline, Smith & Cline 10 ..... abd
Syndicate fee, Port City Oil Co. 12 8
Housierre-Latrielle, Yount Lee Oil Co. 8 85

Completions 3
Production 93
Abandoned 1

PORT BARRE—ST. LANDRY
Hoskins, Gulf Ref. Co. 2-A 50
LOCKPORT—CALCASIEU PARISH
Miller, Vacuum Oil Co. 27 280
SULPHUR—CALCASIEU PARISH
Fee, Union Sulphur Co. 742 2000
VINTON—CALCASIEU PARISH
Star-Vincent, Gulf Ref. Co. 50 ..... abd
Strip, Wilson-Broach 2 3200

Completions 2
Production 3200
Abandoned 1

MISCELLANEOUS LOUISIANA
Acadia Parish—
Iota-Hays, Calcasieu Oil Co. 1 ..... abd
Iberville Parish—
Bayou Des Gluise-Case, Standard Oil Co. 1 ..... abd
Plaquemines Parish—
Garden Isle-State, The Texas Co. 4 .... abd
Terrebonne Parish—
Bay Junope-La. Land Explth. Co., The Texas Company 1 ..... abd

Completions 4
Production 0
Abandoned 4

ARKANSAS FIELDS

SUMMARY OF FIELD OPERATIONS

	Comp.	I.P.	Dry	Gas*	Rgs.	Drg.	Ttl.
Ashley	0	0	0	0	0	1	1
Calhoun	0	0	0	0	0	1	1
Cleburn	0	0	0	0	0	2	2
Columbia	0	0	0	0	0	3	3
Drew	0	0	0	0	0	1	1
Franklin	0	0	0	0	0	1	1
Garland	0	0	0	0	0	1	1
Grant	0	0	0	0	1	0	1
Johnson	0	0	0	0	0	3	3
Lafayette	0	0	0	0	1	0	1
Little River	0	0	0	0	0	2	2
Logan	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Miller	0	0	0	0	0	1	1
Nevada	0	0	0	0	0	1	1
Ouachita	3	62	1	0	0	5	6
Pike	0	0	0	0	0	1	1
Pope	1	0	0	0	1	1	2
Scott	0	0	0	0	0	1	1
Sebastian	1	0	0	1	0	4	4
St. Francis	0	0	0	0	0	1	1
Union	10	10	8	1	6	7	13
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	4	4
White	0	0	0	0	0	1	1
Yell	0	0	0	0	0	1	1
Total June	15	72	9	3	9	46	55
Total May	7	37	5	0	10	46	56
Difference	8	35	4	3	1	0	1

*Gas production: Pope, 4,747,000 feet; Sebastian, 4,000,000 feet; Union, 50,000 feet; total, 8,797,000 feet.

WELLS COMPLETED
OUACHITA COUNTY
11-15-19 Trammell, Buffalo Oil Co. 1.. dry
23-15-16 Arnold & Doyle, L. K. Hamilton 2 50
21-15-19 Grayson, Magnolia Pet. Co. 2 12
POPE COUNTY
16- 9-21 Crotts, Ark.-La. Pipe Line Co. 1 ..... gas
Production 4,747,000
SEBASTIAN COUNTY
28- 8-30 Southland, Lavaca O. & G. Co. 1 ..... gas
Production 4,000,000
UNION COUNTY
14-18-17 Burns, Ark. Nat. Gas Corp. 1 dry
13-18-14 Burnside, Carter et al 1 ..... dry
35-17-14 Telford, O. W. Estes 1 ..... dry
28-18-12 Trammell, H. L. Hunt 1 ..... dry
10-18-13 Ballard, Lion Oil Ref. Co. 1 . dry
36-17-16 Goodwin, Malloy & Co. 4 .... gas
15-18-13 G. G. Simmons, J. W. Olvey 1 dry
21-17-14 Jerry, Root Refineries, Inc., 2 dry
10-18-13 G. G. Simmons, Simms Oil Co. 1 ..... dry
31-17-15 Alderson, Woodley Pet. Co. 5 10

Wells completed 10
Production 10
Dry 8
Gas 1
Gas production 50,000

NORTH LOUISIANA

SUMMARY OF FIELD OPERATIONS

	Comp.	I.P.	Dry	Gas*	Rgs.	Drg.	Ttl.
Avoyelles	0	0	0	0	0	1	1
Bienville	1	0	0	1	0	2	2
Bossier	22	1,261	7	1	5	28	33
Caddo	11	270	5	1	8	7	15
Caldwell	0	0	0	0	0	1	1
Catahoula	0	0	0	0	0	2	2
Claiborne	0	0	0	0	0	3	3
Concordia	0	0	0	0	0	2	2
Desoto	16	100	11	4	2	10	12
East Carroll	0	0	0	0	0	1	1
Franklin	1	0	1	0	0	1	1
Jackson	0	0	0	0	0	1	1
LaSalle	2	0	2	0	0	2	2
Lincoln	0	0	0	0	0	1	1
Morehouse	1	0	0	1	2	5	7
Natchitoches	0	0	0	0	0	3	3
Ouachita	6	0	1	5	10	4	14
Rapides	0	0	0	0	0	1	1
Red River	0	0	0	0	1	2	3
Richland	12	0	0	12	18	18	36
Sabine	18	3,515	11	0	14	29	43
Tensas	0	0	0	0	0	1	1
Union	1	0	0	1	3	3	6
Webster	3	200	2	0	12	8	20
Total June	94	5,346	40	26	75	136	211
Total May	78	5,821	23	33	89	150	239
Difference	16	475	17	7	14	14	28

*Gas production: Bienville, 41,500,000 feet; Bossier, 2,500,000 feet; Caddo, 466,000 feet; DeSoto, 27,000,000 feet; Ouachita, 58,199,000 feet; Morehouse, 27,712,000 feet; Richland, 411,933,000 feet; total, 569,310,000 feet.

WELLS COMPLETED
BIENVILLE PARISH
15-16-10 Ashley, Ark-La. Pipe Line Co. 2 ..... gas
Gas production 41,500,000
BOSSIER PARISH
25-23-12 Barnett, Ark. Fuel Oil Co. 2-A 100
36-23-12 Barnett, Ark. Fuel Oil Co. 2-B 75
36-23-12 Barnett, Ark. Fuel Oil Co. 3-B 120
31-23-11 Kilgore, Ark. Fuel Oil Co. 4-B 15
31-23-11 Kilgore, Ark. Fuel Oil Co. 6-B 20
31-23-11 Kilgore, Ark. Fuel Oil Co. 8-B 100
31-23-12 Kilgore, Ark. Fuel Oil Co. 9-B (loc) ..... abd
36-23-12 Mark Meyer, Ark. Fuel Oil Co. 1 200
30-23-11 Peyton, Ark. Fuel Oil Co. 3 .. dry
23-21-14 Biedenharn, C. H. French 2.. dry
36-23-12 Bollinger, Greenwood Production 1 5
30-23-11 Allen, H. L. Hunt 1 ..... dry
25-23-12 Peyton, H. L. Hunt 5 (loc).. abd
25-23-12 Peyton, H. L. Hunt 7 (loc).. abd
25-23-12 Peyton, H. L. Hunt 8 (loc).. abd
25-23-12 Peyton, H. L. Hunt 9 45
25-23-12 Peyton, H. L. Hunt 10 5
13-17-12 Thigpen & Herold, La. Gas & Fuel Co. 6 ..... gas
21-19-11 Wetherbee, H. I. Morgan 4 .. dry
31-23-11 U. S. Government, Nat. Gas Producing Co. 4 (loc) ..... abd
21-22-11 Bollinger, Reid Clark et al 1 dry
25-23-12 Peyton, The Texas Company 2 5
36-23-12 Wilkinson, The Texas Company 7 271
36-23-12 Wilkinson, The Texas Company 8 300
36-23-12 Wilkinson, The Texas Company 9 200
28-22-13 Antrim, Walker et al 1 .... dry
14-23-12 L.&A.R.R., John Woodley et al 2 ..... dry

Wells completed 22
Production 1261
Dry 7
Gas 1
Gas production 2,500,000
CADDO PARISH
18-16-16 Brumble, Ark.-La. Pipe Line Co. 1-B ..... dry
29-20-15 Muslow, Falcon Oil Co. 3 75
34-21-16 Levee Board, Gulf Ref. Co. 27-A 60
16-21-14 Swann, Magnolia Pet. Co. 1 .. gas
19-19-14 Oden, Pharis, trustee, 1 ..... dry
18-19-14 Oden, Acct. 3, D. C. Richardson 1 ..... dry
2-15-16 Wilson, C. W. Robinson 1 ... dry
29-20-15 Leonard fee, The Texas Company 2 50
29-20-15 Leonard fee, The Texas Company 3 55
23-21-15 Bashara, Tholl Oil Co. 12 30
18-19-16 C. W. Hardy et al, Triangle Drilling Co. 1 ..... dry

Wells completed 11
Production 270
Dry 5
Gas 1
Gas production 466,000
FRANKLIN PARISH
2-14-8 W. B. Welch, Evansville Investment Co. 1 ..... dry
LA SALLE PARISH
7-10-2e Kinney, Kinney, Hardtner & Rendall 1 ..... dry
27-10-2e La. Central O. & G. Co., La. Oil Ref. Co. ..... dry
DE SOTO PARISH
5-14-13 Furman, H. L. Hunt 1 ..... dry
11-13-14 Harris, Odell & Lawton 1 .... gas
6-13-13 Odes Fuller, R. O. Roy 1 .... gas
8-13-13 Brooks, Standard Oil Co. 1 .. dry
5-13-13 Farmer, Standard Oil Co. 1-B dry
32-14-13 Farmer, Standard Oil Co. 1-C dry
5-13-13 C. C. Fuller, Standard Oil Co. 1 ..... dry
6-13-13 J. Fuller, Standard Oil Co. 1-A ..... gas
33-14-13 Lee, Standard Oil Co. 1 ..... dry
33-14-13 Lee, Standard Oil Co. 2 .... dry
8-13-13 McClanahan, Standard Oil Co. 1 ..... dry
8-13-13 McGee, Standard Oil Co. 1 .. dry
5-13-13 Parker, Standard Oil Co. 1-A. dry
31-14-13 Parker, Standard Oil Co. 1-B. gas
7-13-13 H. B. Sample, Standard Oil Co. 1 ..... dry
5-13-13 Tracy, Standard Oil Co. 1 (5,000,000 gas) 100

Wells completed 16
Production 100
Dry 11
Gas 4
Gas production 27,000,000
MOREHOUSE PARISH
16-20-4 Southern Carbon Co. 55 .... gas
Gas production 27,712,000
OUACHITA PARISH
82-18-4 Rea & Green, Ark.-La. Pipe Line Co. 5 ..... gas
26-20-4 Kate Cole, Carbons Consolidated 3 ..... gas
25-20-4 Fairbanks, Hope Production Co. 2 ..... gas
80-18-4 Cole, Jordan Drilling Co. 6 .. gas
13-18-3 Albright, Lyons Gas Co. 2 ... gas
22-19-5 Hare, Union Gas Products Co. 1 ..... dry

Wells completed 6
Dry 1
Gas 5
Production 58,199,000
RICHLAND PARISH
4-16-6 Alexander, Industrial Gas Co. 1 ..... gas
32-16-6 Ellege, Industrial Gas Co. 1 .. gas
3-16-6 Rhymes, Palmer Corp. 6 .... gas
33-17-6 Rhymes-England Planting Co., Palmer Corp. 8 ..... gas
16-16-6 D. R. Sartor, Palmer Corp. 1-E ..... gas
3-16-6 T. S. McCoy, Richland Producing Co. 1 ..... gas
16-16-6 McCoy, Southern Carbon Co. 1 gas
32-16-6 M. L. McCoy, Southern Carbon Co. 1-B ..... gas
30-16-6 L. S. Mulhern, Southern Carbon Co. 1 ..... gas
18-16-6 E. A. and F. B. Sartor, Southern Carbon Co. 4 ..... gas
15-16-6 Duff, United Carbon Co. 1 ... gas
3-15-6 Landers, United Carbon Co. 1 gas

Wells completed 12
Gas 12
Production 411,933,000
SABINE PARISH
35- 8-14 Long-Bell Lbr. Co., H. S. Autrey 1 ..... dry
31- 8-12 Bolin, Joe Burnham 2 ..... dry
31- 8-12 McCormick, Central Pet. Co. 1 ..... dry
32- 8-12 Pearce, J. R. Crawford 1 .... dry
31- 8-12 Williams, Dooley & Howard 1 (loc) ..... abd
31- 8-12 Pearson, R. L. Dudney et al 1 10
13- 7-14 Sabine Lbr. Co., R. L. Gay, trustee, 4 ..... dry
6- 7-12 Knowlton, W. G. Gray 1 .... dry
31- 8-12 Okerson, Gerke et al 1 (drk). abd
31- 8-12 Jones, C. L. Jett, trustee, 1 .. 50
31- 8-12 Carson, Jones et al 1 ..... dry
31- 8-12 Reeves, McMan & Pace 1.... dry
31- 8-12 Corley, L. Nagle 1 35
32- 8-12 Bowman-Hicks, Ohio Oil Co. 3 dry
33- 8-12 Ferguson-Boone, Olsan Brothers 1 3300
27- 8-12 Keelan, Olsan Brothers 1 ... dry
4- 7-11 La. Long Leaf Lbr. Co., Pelican Nat. Gas Co. 1 10
1- 7-12 Sabine Lbr. Co. 1 ..... dry
30- 8-12 Crow, W. D. Perritt 1 65
31- 8-12 Jim Anderson, C. E. Simmons 1 (rig) ..... abd
31- 8-12 Leach, C. E. Simmons 1 (drk) abd
31- 8-12 Colquitt, W. S. Smith et al 1 (drk) ..... abd
31- 8-12 Henderson, W. S. Smith et al 1 (drk) ..... abd
31- 8-12 Williams, W. S. Smith et al 1 (loc) ..... abd
26- 8-12 Sabine State Bank, A. E. Tarver 2 45

Wells completed 18
Production 3515
Dry 11
UNION PARISH
32-21-3 Guinn, Greenwood Production Co. 1-C ..... gas
Production 1,250,540
WEBSTER PARISH
36-23-11 Taylor, J. S. Martin, trustee, 1 ..... dry
36-23-11 Slack, Merrick Oil Corp. 2.... 200
27-18-8 Monzingo, J. J. Kean 1 ..... dry

MISSISSIPPI FIELDS

SUMMARY OF FIELD OPERATIONS

	Rigs	Drlg.	Ttl.
Alcorn	0	1	1
Adams	1	0	1
Chickasaw	0	1	1
Hinds*	6	9	15
Humphreys	0	1	1
Lafayette	0	1	1
Lauderdale	1	2	3
Lincoln	0	1	1
Monroe	0	2	2
Rankin	0	4	4
Warren	0	1	1
Wilkinson	1	0	1
Yalobusha	0	1	1
Yazoo	0	1	1
Total June	9	25	34
Total May	8	19	27
Difference	1	6	7

*One dry hole.

WELLS COMPLETED
HINDS COUNTY
35- 6-1e Harris, La. Gas & Fuel Co. 1. dry

ALABAMA

SUMMARY OF FIELD OPERATIONS

	Rigs	Drlg.	Ttl.
Lamar	0	1	1
Lauderdale	1	0	1
Marion	1	0	1
Washington	0	2	2
Total June	2	3	5
Total May	2	3	5
Difference	0	0	0

KENTUCKY FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Warren	2	2	1	0	0	0	0
Ohio	45	968	12	8	2	50	52
Daviess	20	455	5	2	1	36	37
Hancock	1	15	0	0	0	5	5
McLean	7	195	3	0	0	12	12
Henderson	23	141	12	3	0	13	13
Webster	0	0	0	0	0	3	3
Butler	0	0	0	0	1	1	2
Muhlenberg	0	0	0	0	0	8	8
Hopkins	0	0	0	0	0	7	7
Christian	0	0	0	0	2	2	4
Breckenridge	0	0	0	0	0	1	1
Union	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Cumberland	2	0	2	0	0	0	0
Metcalf	1	0	0	1	0	1	1
Wayne	1	8	0	0	0	3	3
Estill	0	0	0	0	0	3	3
Lee-Owsley	3	15	0	0	0	3	3
Lawrence-Johnson	10	79	0	0	0	1	1
Johnson-Magoffin	2	3	1	0	0	5	5
Floyd	0	0	0	0	0	1	1
Clay	2	0	1	1	2	1	3
Jackson	1	0	0	1	0	0	0
McCracken	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Bell	1	0	0	1	0	0	0
Total June	121	1,881	37	17	8	162	170
Total May	94	2,336	33	5	16	139	155
Difference	27	455	4	12	8	23	15

WELLS COMPLETED
BELL COUNTY
Pikeville—Red Bird Creek, Unknown 1 gas
CLAY COUNTY
Manchester—Begley Coal, Pet. Explth. 1 gas

Green Ferguson, Pet. Expltn. 1 ..... dry

Wells completed 2
Dry 1
Gas 1

CUMBERLAND COUNTY

Williams Prong—Crory Oil 1 ..... dry
Sulphur Creek—Allen Oil 1 ..... dry

Wells completed 2
Dry 2

DAVIESS COUNTY

Owensboro—D. Rice, The Ohio Oil 1 .. dry
B. Mackey, Johnson, Young & Co. 4.. 25
Rommey Graham, Pet. Expltn. 1 5
W. G. Hayden No. 2, Hupp, Duff & Co. 1 50
Widow Noel, Hupp, Duff & Co. 2 50
Widow Noel, Hupp, Duff & Co. 3 40
W. G. Hayden No. 2, Hupp, Duff & Co. 2 40
Allie Atherton, Hupp, Duff & Co. 1 .. 50
Anna Sparks, Hupp, Duff & Co. 1 50
Bratcher, Hupp, Duff & Co. 4 25
W. L. Weir, Hupp & French 2 25
J. R. Walker, Hunt & Crow 5 ..... dry
Linus Howard, Asby & Co. 2 ..... dry
J. M. Clark, S 90-ac., Evans & Garrison 5 20
Atherton, Dr. Sirman 1 ..... gas
Van Cleve, R. W. McMahan & Co. 1.. 50
Albert Jackson, Brenner & Adams 1.. 25
J. G. Ryselburghe, H. C. Smith Co. 1 dry
Yeiser, Rex-Pyramid Oil 3 ..... dry
Unknown, Rex-Pyramid Oil 1 ..... gas

Wells completed 20
Production 455
Dry 5
Gas 2

HANCOCK COUNTY

Pellville—J. B. McGarvin, Lowman, Daly & Co. 4 15

HENDERSON COUNTY

Niagara—L. Akins, Fred Esslinger & Co. 1 ..... dry
R. C. Duncan, Niagara Oil & Gas 4.. 10
Cleveland Griffin, Niagara Oil & Gas 1 ..... dry
Green Osborne, I. J. Browning 1 .... dry
Bert Duncan, I. J. Browning 1 ..... dry
T. E. Farley, I. J. Browning 1 ..... dry
Niagara Church lot, Evansville Synd. 1 ..... dry
W. C. Powell, H. C. Wilson & Co. 1 .. gas
George Rodout, H. C. Wilson & Co. 3 gas
George Fulkerson, Henderson Synd. 1 dry
G. H. Fryor, Henderson Synd. 4 .... dry
G. F. King, H. A. Pointer & Co. 1 ... dry
J. B. Crosby, H. A. Pointer & Co. 1 .. dry
Henry Watson, Black Bros. 1 ..... dry
Jim Clair, Wittmer Oil & Gas 1 .... dry
E. F. Powell, Wittmer Oil & Gas 3 .. gas
N. R. Jackson, Wittmer Oil & Gas 2.. 15
N. R. Jackson, Wittmer Oil & Gas 3.. 5
C. M. Gish, Thomas Wittmer 6 30
C. M. Gish 200-ac., John B. Lyddane trustee 7 10
C. M. Gish 200-ac., John B. Lyddane trustee 8 30
Fulkerson, Pearson & Parks 1 6
J. E. Knight, P. E. Tichenour 4 35

Wells completed 23
Production 141
Dry 12
Gas 3

JOHNSON-MAGOFFIN COUNTIES

District 27—Williams hrs., Magoffin Oil Corp. 5 ..... dry
District 29—Sam Lemaster, Peoples Pittsburgh Trust 2 3

Wells completed 2
Production 3
Dry 1

JACKSON COUNTY

McKee—Wolfork Land, Pet. Expltn. 5. gas

LEE-OWSLEY COUNTIES

Beattyville—Trabue hrs., Pet. Expltn. 6 8
District 16—Medley S. Cole, G. C. Mays 6 2
District 17—Darch Short hrs., First National Bank of Jackson 4 5

Wells completed 3
Production 15

LAWRENCE-JOHNSON COUNTIES

District 22—J. J. Gambill, Swiss Oil Corp. 47 8
J. J. Gambill, Swiss Oil Corp. 48 5
J. J. Gambill, Swiss Oil Corp. 49 11
District 32—Jess Lyons, Swiss Oil Corp. 37 5
Jess Lyons, Swiss Oil Corp. 39 5
P. P. Holbrook, Swiss Oil Corp. 53 .. 25
P. P. Holbrook, Swiss Oil Corp. 55 .. 4
P. P. Holbrook, Swiss Oil Corp. 52 .. 8
P. P. Holbrook, Swiss Oil Corp. 61 .. 3
P. P. Holbrook, Swiss Oil Corp. 62 .. 5

Wells completed 10
Production 79

McLEAN COUNTY

Calhoun—T. Leachman, White Plains Oil & Gas 1 ..... dry
O. O. Sandefur, Ellis & Thomas 1 35
Whittaker, Olean Pet. 1, 2 ..... dry
Whittaker, Olean Pet. 3 10
G. B. McManama 50, McLean Dev. 1. 50
Dunn, Miller & Damron 1 100

Wells completed 7
Production 195
Dry 3

METCALF COUNTY

Edmonton—Jamieson, Consolidated Utilities 1 ..... gas

OHIO COUNTY

Hartford—H. Carden, Cumberland Pet. 1 dry
W. A. Moseley, Cumberland Pet. 2 .. 25
Small Skillman, Cumberland Pet. 1 .. 20
W. H. Hamilton, The Kemrow Co. 3.. 100
T. P. Royal 60-ac., T. P. Royal & Co. 15 75
Albert Payne, James C. Ellis & Co. 1 dry
Perry Talley, James C. Ellis & Co. 3.. 25
Perry Talley, James C. Ellis & Co. 4.. 25
Dan Mitchell, James C. Ellis & Co. 4.. 30
Dan Mitchell, James C. Ellis & Co. 3.. dry
Melvin Bartlett, James C. Ellis & Co. 1 60
Moseley, James C. Ellis & Co. 1 30
Dan Mitchell, James C. Ellis & Co. 5.. 50
Wedding hrs., James C. Ellis & Co. 2 gas
J. W. Moseley, James C. Ellis & Co. 2 gas
R. A. Miller, Louisville Gas & Electric 8 75
Scott Huff, Louisville Gas & Electric 1 15
John Christian, Louisville Gas & Electric 1 ..... dry
W. P. Crow, C. A. Daily 1 ..... gas
George Ray, Baker & Co. 1 ..... dry
J. P. Simpson, James C. Ellis 1 .... gas
Pate Royal, H. L. Ogle & Co. 25 30
Pate Royal, H. L. Ogle & Co. 26 100
Crow, Vickers, White & Co. 1 75
J. W. Greer, Leeper Oil 3 50
Chas. Roach, E. G. Purtle & Co. 8 .. dry
Lon Smith, Three "C's" Oil & Gas 2 20
Margaret Roberts, Maple, Liles & Co. 2 6
Harden Shiley, Three "C's" Oil & Gas 2 ..... dry
Hill Rhodes, Three "C's" Oil & Gas 3 20
Herb Coy, Dough Bolling 1 ..... dry
Sam Fuqua, D. J. White & Co. 1 ... dry
T. Leninger, Keown & Co. 1 75
J. D. Colyer, National Deposit Bank 8 8
J. J. Miller, H. L. Ogle & Co. 1 30
J. J. Miller, H. L. Ogle & Co. 2 10
Magan, K. N. Dole & Co. 1 ..... gas
Cooper, J. D. Cooper & Son 1 ..... gas
Bud St. Clair, Thrasher, Brewer & Co. 1 ..... gas
W. H. Haynes, Stewart & Weir 1 .... gas
J. J. Smith, S. R. Berry & Co. 2 10
Tom Fuqua, D. J. White & Co. 1 .... dry
Ford hrs., Huff & Bratton 1 ..... dry
J. P. Simpson, Dr. Buckner & Co. 1.. dry
I. L. Wallace, Wood Oil Co. 4 4

Wells completed 45
Production 968
Dry 12
Gas 8

WAYNE COUNTY

District 13—Ira Guffey, A. J. Hanlin & Co. 1 8

WARREN COUNTY

Bowling Green—J. C. Davenport No. 1, K. M. Wright 6 ..... dry
M. Reeves, Homer Julian & Co. 1 ... 2

Wells completed 2
Production 2
Dry 1

TENNESSEE FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Putnam	0	0	0	0	0	2	2
Smith	1	0	0	1	0	1	1
Clay	0	0	0	0	2	0	2
Dickson	1	0	0	1	0	2	2
Warren	0	0	0	0	0	1	1
White	0	0	0	0	0	1	1
Morgan	6	0	0	6	0	2	2
Lincoln	1	0	0	1	0	2	2
Total June	9	0	0	9	2	11	13

WELLS COMPLETED

SMITH COUNTY

Carthage—Town lot, Kirkwood & Campbell 1 ..... gas

DICKSON COUNTY

White Bluff—Oakley, J. T. Newell & Co. 1 ..... gas

MORGAN COUNTY

Sunbright—Unknown, Benedum-Trees 1, 2, 3, 4 ..... gas
Unknown, East. Tenn. O. & G. 1, 2... gas

Wells completed 6
Gas 6

LINCOLN COUNTY

Smithland—Dickey, United L. & P. 1.. gas

ROCKY MOUNTAIN AREA

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Chaves	0	0	0	0	0	1	1
De Baca	0	0	0	0	0	2	2
Eddy	1	0	0	1	1	5	7
Lea	4	8,735	0	0	16	42	58
McKinley	0	0	0	0	2	9	11
Rio Arriba	0	0	0	0	0	5	5
San Juan	0	0	0	0	0	7	7
San Miguel	0	0	0	0	0	5	5
Torrance	0	0	0	0	1	2	3
Miscellaneous	0	0	0	0	2	10	12
Total June	5	8,735	0	1	22	89	111
Total May	6	72	4	0	29	80	109
Difference	1	8,663	4	1	7	9	2

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Arapahoe	1	0	1	0	0	1	1
Boulder	0	0	0	0	0	5	5
Fremont	1	80	0	0	0	13	13
Huerfano	1	0	1	0	1	1	2
Jackson	0	0	0	0	0	5	5
Larimer	1	15	0	0	5	4	9
Las Animas	0	0	0	0	1	4	5
Moffat	1	155	0	0	7	9	16
Morgan	0	0	0	0	0	2	2
Rio Blanco	0	0	0	0	0	2	2
Routt	0	0	0	0	3	0	3
Yuma	0	0	0	0	0	2	2
Miscellaneous	0	0	0	0	2	31	33
Total June	5	250	2	0	19	79	98
Total May	4	0	3	1	19	75	94
Difference	1	250	1	1	0	4	4

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Total June	2	0	1	1	1	29	30
Total May	0	0	0	0	3	32	35
Difference	2	0	1	1	2	3	5

WYOMING

Summary of Field Operations

District or County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Salt Creek	2	87	0	0	2	4	6
Big Horn	0	0	0	0	0	8	8
Carbon	7	70	0	0	0	12	12
Fremont	0	0	0	0	0	6	6
Hot Springs	0	0	0	0	0	3	3
Johnson	0	0	0	0	0	3	3
Lincoln	0	0	0	0	1	6	7
Natrona (ex. Salt Creek)	1	25	0	0	2	8	10
Park	1	50	0	0	9	17	26
Sweetwater	2	1,250	0	1	2	8	10
Uinta	0	0	0	0	3	12	15
Sublet	2	135	0	0	2	9	11
Weston	12	819	1	0	7	10	17
Miscellaneous	0	0	0	0	4	5	9
Total June	22	2,436	1	1	32	111	143
Total May	5	135	3	0	21	115	136
Difference	17	2,301	2	1	11	4	7

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Kevin-Sunburst	13	125	6	1	8	8	16
Pondera	1	120	0	0	1	1	2
Border Field	3	425	1	0	3	8	11
Miscellaneous	8	38	2	5	8	61	69
Total June	25	718	9	6	20	78	98
Total May	15	125	4	5	25	86	111
Difference	10	593	5	1	5	8	13

WELLS COMPLETED

NEW MEXICO

21-17-29 State, Leonard & Levers 3.... gas
6-22-36 Closson, Empire G. & F. 1.... 145
21-23-36 State, Texas Pacific C. & O. 3. 380
16-23-36 State, Cranfill & Reynolds 1-C 210
32-18-38 State, Shell Pet. Corp. 1..... 8000

Wells completed 5
Production 8735
Gas 4,000,000

WELLS COMPLETED

COLORADO

10-4n-91 Knowlton, Texas Prod. Co. 6. 155
6-9n-68 Scott, Continental Oil Co. 5... 15
15-27-65 Abeyta, Sporleder & Elliott 1 dry
22-20-69 San Isabel, Continental Oil 4.. 80
21-4s-67 Shaffer, H. Brown Cannon 1.. dry

Wells completed 5
Production 250
Dry and abandoned 2

WELLS COMPLETED

UTAH

26-21-23 State, Utah Southern Oil 1.... dry
12-15-11 Carbon Dioxide & Chemical 1.. gas

Wells completed 2
Gas production 1,500,000
Dry 1

WELLS COMPLETED

WYOMING

35-40- 79 SE Wyo. Asso. 1-SD-2..... 41
24-40- 79 SW Wyo. Oil Fields Co. 33-SD-2 46
34-26- 88 Prod. & Refs., 2 Mahoney... 70
11-38- 78 Smith, Wyalta Oil Co. 3..... 25
32-58- 99 Local, Local Oil Co. 6..... 50
11-26- 90 Prairie O. & G. Co. 75-A....1250
10-16-104 Sullivan, Mountain F. S. 1.. gas
3-26-113 Charles S. Hill 2..... 75
34-27-113 California Pet. Co. 3-L..... 60
24-46- 64 McCulloch, Byron Gardner 1.. dry
25-47- 64 W. R. Harris 1..... 8
14-46- 64 State, Osage Trust Co. 3..... 200
17-46- 63 La Fliche Oil Co. 25
1-46- 63 Kelso Oil Co. 1..... 2
1-46- 63 Kelso Oil Co. 2..... 3
1-46- 63 Kelso Oil Co. 3..... 1
1-46- 63 Kelso Oil Co. 4..... 2
14-46- 64 Updike, Straitiff & Curtis 1.. 200
13-46- 64 Osage Trust Co. 3..... 120
23-46- 64 McCulloch, Jas. McCulloch 1. 200
7-46- 63 Rinehart, et al 3..... 8
7-46- 63 Walker, et al 2..... 50

Wells completed 22
Production 2436
Gas 14,000,000
Dry and abandoned 1

WELLS COMPLETED

MONTANA

25-35-2 Abell, Horton B. G., Abell Co. 6 10
25-35-3 Arronow, Goeddertz 2 18
29-35-1 Anderson, Ferdig Oil Co. 25.. dry
29-35-2 Jarrett, "56" Petro. Corp. 12. 5
6-33-1 Ludwig, Franklin Oil Co. 1 .. dry
36-35-2 Homestake, Gunsberg Oil Co. 6 ..... dry
21-33-1 Spensey, International Royalty Co. 2 ..... gas
12-34-3 Petters, Sunrise Prod. Co. 1.. dry
25-33-2 Kreitzberg, Northern Nat. Gas Co. 1 ..... dry
29-35-1 Bluhm, W. E. Rice 14 10
19-35-2 Seabrook, Senhew Petro. Co. 3 73
22-35-2 Pewters, Texas Pacific 13-A 10
36-35-2 State, Texas Pacific 53 ..... dry
8-27-4 Jones, Midwest Refg. Co. 33 SE 120
30-36-21 Syrs, Black Gold Petro. 1 ... gas
7-34-4 Thompson, C. H. Thompson 1 dry
18-36-6 Watford, Sunburst O. & R. 1 33
15- 1-33 Big Horn Gas Co. 12 ..... gas
2- 9-58 Capitol Gas Corp. ..... gas
4- 9-58 Capitol Gas Corp. ..... gas
16- 6-80 Gas Dev. Co. 55 ..... gas
34-16-38 Montana Corp. ..... dry
1-37-4 Farbo, Rice Radigan Oil Co. 1 150
2-37-4 Iowa Holding, Hannah Porter Co. 285
1-37-4 Buckley, Huso Bros. 1 ..... dry

Completions 25
Production 718
Dry 9
Gas 6

EASTERN FIELDS

Summary of Completed Work

Fields—	Comp.	Prod.	Dry	Gas
Allegany	21	34	0	0
Bradford	184	279	0	0
Venango-Clarion	22	22	5	4
Middle Field	3	10	1	0
Butler-Armstrong	12	11	3	1
Southwest Pennsylvania	18	37	3	3
West Virginia	64	263	13	28
Southeast Ohio	79	1,499	13	15
Total June	403	2,155	38	56
Total May	413	2,057	35	44
Difference	10	98	3	12

Summary of Work Under Way

Fields—	Rigs	Drlg.	Ttl.
Allegany	6	22	28
Bradford	19	55	74
Venango-Clarion	0	20	20
Middle Field	0	3	3
Butler-Armstrong	3	5	8
Southwest Pennsylvania	1	23	24
West Virginia	20	68	88
Southeast Ohio	28	89	117
Total June	77	285	362
Total May	70	346	416
Difference	7	61	54

WELLS COMPLETED

ALLEGANY FIELD

Fee, Andrews Oil Co. 4
Kurtzbaltz, E. G. and F. W. Stephan .. 2
Fee, Mary Lippert 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Fee, Ryder & Richmond Oil Corp. 2
Homer, Frank Homer 1
Forest Oil Corp. 1
Forest Oil Corp. 1
Forest Oil Corp. 1
Forest Oil Corp. ..... pressure
Forest Oil Corp. ..... pressure
Fee, Bayard C. Tullar 1
Fee, A. H. Ashwood 1
Brown, Hazelwood Oil Co. 1
Birtcil, First Natl. Bank Olean 1
Fee, J. M. McDivitt et al 1
Fee, J. A. Bucher 2
Fee, J. E. LeSuer et al 3
Fee, I. O. Dillie 4

Completions 21
Production 34
Pressure 2

BRADFORD FIELD

Fee, Mix Creek Oil Co. 1
Fee, Mix Creek Oil Co. ..... pressure
Westons, G. C. Rice et al ..... pressure
Rounds, J. W. Kaufman 1
Rounds, J. W. Kaufman 1
Rounds, J. W. Kaufman 7
Rounds, J. W. Kaufman 8
Rasey, J. W. Kaufman 2
Montz, L. F. Kinley 62 1
371 Bingham, Lane et al 66 1
389 Bingham, D. W. Daly 72 1
374 Bingham, J. F. Magee 7 1
388 Bingham, O. L. Wann et al 58 1
411 Bingham, R. M. and James George 42 2
464 Bingham, R. S. Pringle 38 1
Forest Oil Corp. (5 wells) 5
Forest Oil Corp. (10 wells) ..... pressure
Forest Pet. Corp. (7 wells) 7
Forest Pet. Corp. (11 wells) ..... pressure
Niagara Oil Corp. (31 wells) 31
Niagara Oil Corp. (16 wells) ..... pressure
Hawkins Oil Corp. 1
Hawkins Oil Corp. ..... pressure
Forest Dev. Corp. (4 wells) ..... pressure
Quintuple, Healey Pet. Corp. 1
Tibbits, Minard Run Oil Co. 1
Quintuple, Bovaird & Enright 1
Freeman, Freeman and Stuchel 2
Freeman, Freeman and Stuchel 3
Freeman, Freeman and Stuchel 3
4294, South Penn Oil Co. 2
Bovaird, A. E. Booth 5
Blair, South Penn Oil Co. 7
Mills, W. H. Emery 2
Enterprise, South Penn Oil Co. 1
Wheeler, South Penn Oil Co. 1
Fee, Blaisdell Oil Co. 1
Lawton, Niagara Oil Corp. 2 1
Lawton, Niagara Oil Corp. ..... pressure
Weston, Bradford Prod. Co. 1
Weston, Bradford Prod. Co. 1
Burdick, South Penn Oil Co. 2
Rounds, South Penn Oil Co. 4
Hamlin, South Penn Oil Co. 2
Fee, M. C. Reidy 3
Schenfield, Kinley Oil Co. 2
Fee, W. W. and W. E. Parmenter pressure
Fee, W. E. Williams et al ..... pressure
Fee, W. E. Williams et al ..... pressure
Fee, W. E. Williams et al ..... pressure
Fee, W. E. Williams et al ..... pressure
Fee, R. O. Landers et al 3
Fee, R. O. Landers et al 2
Franchot, Holmes Oil Co. 1
Franchot, R. A. Delo et al 2
Fee, G. W. Crooks estate 3
Franchot, John Jackson 5
Franchot, Bradford Prod. Co. 15
Taylor, South Penn Oil Co. 1
Griffith, Tanner & McKean Co. Trust Co. 2
Griffith, Tanner & McKean Co. Trust Co. 2

Morris, Healey Pet. Corp. 1
Fee, Pet. Reclamation Co. ..... pressure
Fee, Mary J. Sparks 4
Fee, F. Southard 1
Fee, Park & Hungiville 1
Bingham 468, Brink & Brink 2
Fee, T. H. Givan 5
Bingham 321, D. T. Andrus 2
Fee, E. M. Park estate 5
Bingham, Hazelwood Oil Co. 2
Bingham 400, South Penn Oil Co. 2
Moody, South Penn Oil Co. 3
N. W. M. & E., South Penn Oil Co. 2
N. W. M. & E., South Penn Oil Co. 3
Satterfield, South Penn Oil Co. 2
Fee, Olean Pet. Co. ..... pressure
Fee, Olean Pet. Co. ..... pressure
Fee, Olean Pet. Co. ..... pressure
Fee, Olean Pet. Co. ..... pressure
Patterson, E. H. Sage 2
Niagara Oil Corp., Phoenix Oil Co. 4
Kinzua fee, South Penn Oil Co. 15
Kinzua fee, South Penn Oil Co. 20
Bingham 190, South Penn Oil Co. 5
Drake, E. A. Williams et al 1
Tract 1, Hazelwood Oil Co. 1
Enterprise, South Penn Oil Co. 1
Fee, N. D. Gibson et al 1
Kinley Oil Co., H. J. Walter 1
Fee, Kate Schoonover 1
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Bingham 398, South Penn Oil Co. 3
Bingham 368, Grant & Mohan 2
Bingham 408, South Penn Oil Co. 4
Bingham 554, South Penn Oil Co. 3
Fee, Minard Run Oil Co. 10
Jones, South Penn Oil Co. 2
Borden, T. P. Thompson, Jr. 3
Bucher, Sloan & Zook ..... pressure
Brooks, South Penn Oil Co. 3
Willetts, J. W. Looker 3
Kendall, Margaret Coit 1

Completions 184
Production 279
Pressure 56

VENANGO-CLARION

Wike, L. F. Perrine 14 1
Reid, Exchange Bank & Trust Co. 2 3
Jones, Allen Oil Co. ..... dry
Hasson, Alum Oil & Gas Co. et al 6 1
Van Camp, Shaffer Oil Co. 4 1
Manley, Glass & Highfield 27 1
Foster, H. C. Foster 61 1
Lewis, S. R. Lewis et al 2 ..... dry
Meherton, F. C. Deemer 27 1
Meherton, F. C. Deemer 28 1
Slicker, H. J. Slicker & Sons 16 ..... dry
Rupert, Steadman et al 1 ..... dry
Shoup, W. F. Reighner 4 4
Shriver, American Gas Co. 1 ..... dry
Korb, W. B. and F. E. Kapp 19 ..... gas
Bush, Fryburg Motor Co. 11 ..... gas
Black, T. P. Swartzfager et al 1 ..... gas
Alden, Weaver Bros. 1 ..... gas
Millis, A. R. and George A. Long 23 5
Columbia, Bundred Oil Corp. 48 1
Columbia, Brundred Oil Corp. 49 1
Columbia, Brundred Oil Corp. 50 1

Completions 22
Production 22
Dry 5
Gas 4

MIDDLE FIELD

Duek, Penn Pet. Co. 5
Cotton, T. O. Glenn et al 5
Brown, J. G. Cochrane 15 ..... dry

Completions 3
Production 10
Dry 1

BUTLER-ARMSTRONG

Ziegler, Elliott & Dufford 1 1
Love, Marshall, Love et al 1 ..... dry
McIntosh, Albaugh & O'Hara 2 ..... dry
Duffy, Addah Z. Burke et al 4 1
Wiles, Storey, West et al 2 2
Lindsey, T. A. Lindsey & Co. 1 ..... dry
Raisley, Burton Bros. 3 ..... gas
Gibson, First Natl. Bank of Parker 4 2
Moore, G. W. P. Orton 8 1
Bell, T. P. Bell 7 1
Fletcher, Hawks & McWilliams 2 2
McCollough, M. B. Finnessy 7 1

Completions 12
Production 11
Dry 3
Gas 1

CENTRAL OHIO

CENTRAL OHIO FIELD
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Ashland	16	36	6	5	3	12	15
Medina	4	5	0	3	0	4	4
Lorain	4	0	2	2	2	6	8
Wayne	6	9	1	4	1	6	7
Holmes	4	140	2	1	1	8	9
Cuyahoga	2	0	2	0	0	1	1
Ashtabula	2	0	1	1	1	2	3
Richland	4	0	2	2	2	2	4
Knox	4	4	1	2	3	6	9
Coshocton	1	0	1	0	0	5	5
Summitt	5	0	0	5	2	12	14
Licking	11	631	1	0	1	14	15
Muskingum	16	772	1	6	6	22	28
Athens	9	19	1	5	8	14	22
Meigs	6	14	0	3	6	25	31
Jackson	2	0	0	2	6	8	14
Vinton	4	3	2	0	3	6	9
Lawrence	2	0	1	1	2	3	5
Tuscarawas	7	60	0	6	2	10	12
Stark	1	0	1	0	1	9	10
Fairfield	2	0	0	2	1	2	3
Guernsey	4	102	1	0	8	8	16
Belmont	3	1	1	1	1	4	5
Gallia	0	0	0	0	0	1	1
Harrison	1	5	0	0	0	0	0
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Delaware	0	0	0	0	0	1	1
Total June	119	1,801	27	51	60	194	254
Total May	111	2,130	35	48	48	218	266
Difference	8	329	8	3	12	24	12

WELLS COMPLETED
ASHLAND COUNTY

Greene—G. W. Tugend, Ohio Fuel Gas 2-5,133 ..... dry
Jackson—M. W. Connell, Ohio Fuel Gas 1-5,110 ..... dry
Orange—Al Ott, Ohio Fuel Gas 2-5,131 gas
Wade Welch, Ohio Fuel Gas 1-5,145 .. gas
Mohican—Ellis A. Morris, The Preston Oil 1-1,427 ..... dry
Perry—E. Barnhart, Coast & Co. 8 .... dry
E. Barnhart, Coast & Co. 9 9
Montgomery—J. F. Long, Ohio Fuel Gas 1-5,135 ..... dry
W. S. Wiley, The Kemrow Co. 1 .... gas
John L. Smith, The Kemrow Co. 2 .. gas
Lake—John P. Smith, Robinson & Co. 6 3
John P. Smith, Robinson & Co. 7 20
W. S. Wolf, Robinson & Co. 2 3
W. S. Wolf, Robinson & Co. 3 1
Henry Mosher, O. C. Smith & Co. 2 .. dry
Vermillion—D. R. Harlan, Ohio Fuel Gas 1-5,091 ..... gas

Wells completed 16
Production 36
Dry 6
Gas 5

ATHENS COUNTY

Ames—G. L. Fleming, Ohio Fuel Gas 2-5,086 ..... gas
C. W. Green, Ohio Fuel Gas 1-5,140 .. gas
Robt. Bean, Mosure & Co. 11 4
Berne—Levie J. Elliott, Ohio Fuel Gas 4-5,076 ..... gas
Lee—Emma Marchant est., Townsend Oil 1 15
Lodi—H. A. Pinkerton, Ohio Fuel Gas 1-4,856 ..... gas
Alexander—Fred R. Cooley, Park Bowser & Co. 3 ..... dry
Carthage—S. R. Coon, Orange Gas Co. 2 gas

Wells completed 8
Production 19
Dry 1
Gas 5

MEDINA COUNTY

Lafayette—Anna Sciepchalk, Ohio Fuel Gas 1-4,995 ..... gas
Clara M. Jones, Ohio Fuel Gas 2-5,114 gas
Chatham — Watson-Sanford, Oko Fuel Gas 36 5
Harrisville—W. E. Buck, Ohio Fuel Gas 1-5,117 ..... gas

Wells completed 4
Production 5
Gas 3

LORAIN COUNTY

Carlisle—Julia A. Clark, Ohio Fuel Gas 4-5,122 ..... gas
Emanuel Eckler, Ohio Fuel Gas 1-5,-123 ..... gas
Ridgeville—F. & W. Chamberlain, The Kemrow Co. 1 ..... dry
Ellen Burgert, J. W. Cushing 1 ..... dry

Wells completed 4
Dry 2
Gas 2

WAYNE COUNTY

Congress—George Wohlgemuth, Ohio Fuel Gas 1-5,096 ..... gas
K. W. Taylor, Barnhart & Co. 5 ..... gas
Chester—George Marks, Faulkner & Co. 5 ..... dry
Ashley Smyser, Faulkner & Co. 2 .... gas
Ed Landis, Hulse & Kunditz 1 ..... gas
Franklin—J. W. Cutter, Arkansas Fuel Oil 1 9

Wells completed 6
Production 9
Dry 1
Gas 4

HOLMES COUNTY

Hardy—S. H. Sterling, East Ohio Gas 4 140
Eliza A. Uhl, Ohio Fuel Gas 1-5,088 .. dry
Richland—Alonzo McFadden, Ohio Fuel Gas 1-4,917 ..... gas
Bertha E. Johnson, East Ohio Gas 1 dry

Wells completed 4
Production 140
Dry 2
Gas 1

CUYAHOGA COUNTY

Olmstead—Nathan Seigel, Ohio Fuel Gas 1-5,087 ..... dry
Chas. W. Root, Ohio Fuel Gas 1-5,134 dry

Wells completed 2
Dry 2

ASHTABULA COUNTY

Conneaut—J. L. Evans, Schaeffer Bros. 2 ..... gas
Rome—G. E. Chester, Ohio Fuel Gas 1-4,978 ..... dry

Wells completed 2
Dry 1
Gas 1

RICHLAND COUNTY

Worthington—Francis E. Bowen, Ohio Fuel Gas 1-5,111 ..... gas
Sharon—Frank A. Hunter, Galecrest Oil & Gas 1 ..... gas
Weller—Henry Folk, Meyers Oil & Gas 1 dry
J. F. Houston, Meyers Oil & Gas 1 .. dry

Wells completed 4
Dry 2
Gas 2

KNOX COUNTY

Brown—J. A. Reed, Ohio Fuel Gas 2-5,067 ..... gas
Wm. Myers, Ohio Fuel Gas 3-1,575 .. gas
Zion Church lot, Upham Gas 1 ..... dry
Chas. Scoles, East Ohio Gas 12 4

Wells completed 4
Production 4
Dry 1
Gas 2

COSHOCTON COUNTY

Monroe—John Snow, Ohio Fuel Gas 1-5,129 ..... dry

SUMMITT COUNTY

Franklin—Ed Dunn, East Ohio Gas 4 .. gas
D. & S. Thursby, F. A. Brendall & Co. 1 ..... gas
Greene—W. H. Humbert, F. A. Brendall & Co. 1 ..... gas
W. C. Rech, East Ohio Gas 1 ..... gas
C. H. Swartz, East Ohio Gas 1 ..... gas

Wells completed 5
Gas 5

LICKING COUNTY

Fallsburg—Wallace Davidson, Ohio Fuel Gas 2 140
Jacob Hackley, Murphy & Co. 2 60
Earl Rine, Emerald Pet. 4 35
Wm. Babcock, Emerald Pet. 1 70
Amos Van Winkle, Wittmer Prop. Trust 2 50
W. T. Booth, Norpell & Co. 1 104
Franklin—A. O. Guthridge, Bishop, Deetry & Co. 5 4
Perry—A. A. Ashcraft, Whitehill Oil 15 5
C. W. Sommerville, Newark Oil Tool Co. 1 ..... dry
Hanover—Homer C. Priest, The Pure Oil 5 88
Criswell-Fenner, Everette Gas Co. 1.. 75

Wells completed 11
Production 631
Dry 1

MUSKINGUM COUNTY

Washington—Thos. J. Chaplin, Wittmer Prop.'s Trust 2 ..... gas
J. L. Robinson, Wittmer Prop.'s Trust 1 ..... gas
Hopewell—W. O. Burrier, The Preston Oil 1-1,407 60
J. M. Sidle, Hopewell Gas & Fuel 3.. 185
Jos. Varner, Hope Const. & Ref. 5 .. 20
Clay—Elk Coal, Kachelmacher est. 3.. 85
Nelson McCoy, Crawley & Co. 3 80
Ellis S. Funderberg, Bell Scholl 1 17
Ramsbottom, Wm. Kline & Co. 4 55
State of Ohio, Noah Andrews & Co. 1 150
State Brick Plant, Noah Andrews & Co. 4 120
Perry—W. L. McCurdy, Ohio Fuel Gas 1-5,060 ..... gas
J. L. Sutter, Ohio Fuel Gas 1-5,061.. gas
Jackson—Albert Holman, The Pure Oil 2 ..... gas
Highland—Chester O. Hardy, Wehrle Co. 1 ..... gas
Newton—Fee, Hydraulic Pressed Brick Co. 1 ..... dry

Wells completed 16
Production 772
Dry 1
Gas 6

MEIGS COUNTY

Sutton—C. and W. Easterday, The Preston Oil 7-1,416 5
W. J. Krider, Big Four Oil & Gas 3.. 5
Wm. Carnahan, Tyree & Co. 18 4
Rutland—J. W. Carr, Ohio Fuel Gas 2-5,073 ..... gas
J. A. Colwell, Chase & Co. 1 ..... gas
E. M. Gray, Kiggins & Co. 2 ..... gas

Wells completed 6
Production 14
Gas 3

JACKSON COUNTY

Washington—Mary S. Long, Ohio Fuel Gas 1-5,099 ..... gas
Lick—Scott Alashire, Ohio Fuel Gas 2-5,070 ..... gas

Wells completed 2
Gas 2

VINTON COUNTY

Knox—J. H. Moore, Moore Oil & Gas 1 2
C. E. Stout, H. C. Farmer & Co. 1 .. 1
Cameron Clark, Co-operative Oil 5 .. dry
C. S. Clark, Powers Oil & Gas 3 .... dry

Wells completed 4
Production 3
Dry 2

LAWRENCE COUNTY

Perry—John C. Clay, Ohio Fuel Gas 1-5,-005 ..... dry
Rome—Ida McCown, C. C. Wolfe & Co. 1 ..... gas

Wells completed 2
Dry 1
Gas 1

TUSCARAWAS COUNTY

Oxford—R. T. McKeen, T. Lynch & Co. 2 ..... gas
Phil Lamneck, Gordon Oil Co. 3 .... gas
Oscar Quillan, Traders Oil & Gas 2.. gas
Loverige Meek, Gordon Oil 1 ..... gas
Anna Meek, George Jewell & Co. 1 .. gas
C. H. Smetts, Gas Prod. Co. of Ohio 2 gas
Stewart Asher, Capitol Drlg. Co. 2 .. 60

Wells completed 7
Production 60
Gas 6

STARK COUNTY

Onaburg—C. Youtz, East Ohio Gas 1 .. dry

FAIRFIELD COUNTY

Pleasants—Henry Hartman, City Natural Gas Works 4 ..... gas
Richland—Jeff & George Shaw, Perry Sturm & Co. 2 ..... gas

Wells completed 2
Gas 2

GUERNSEY COUNTY

Wheeling—J. O. Alloway, Ohio Fuel Gas 1-1,413 25
Loren C. Stocker, Ohio Fuel Gas 3-1,-414 15
J. W. Fowler, The Kemrow Co. 2 .. 62
Adams—J. R. McBurney, George Mc-Laughlin & Co. 2 ..... dry

Wells completed 4
Production 102
Dry 1

BELMONT COUNTY

Somerset—D. L. Hagan, Central Gas Co. 2 ..... dry
L. Foster, Shay McMullen 1 1
W. C. Wheatley, Peters & Patterson 1 gas

Wells completed 3
Production 1
Dry 1
Gas 1

HARRISON COUNTY

Monroe—John A. Long, Frank Quinn 9 5

WEST VIRGINIA
WELLS COMPLETED
HARRISON COUNTY

Pitts, Reserve Gas Co. 2 12
Yates, Reserve Gas Co. 1 ..... gas
Lucas Brothers, hlia. Gas Co. 4986 .. gas

MARION COUNTY

Lanningham, So. P. O. Co. 8 3

MONONGALIA COUNTY

Moore, Moore Tex Oil Co. 2 ..... gas

WETZEL AND TYLER COUNTIES

Kennedy heirs, Mfrs. L. & H. Co. 1 ... gas
Snodgrass, Null & Morehead 2 ..... gas
Hentzman, Oakland Oil Co. 1 ..... dry
Feiat, Waeden & Co. 1 ..... dry

MARSHALL COUNTY

Clark, Marshall, Preston O. Co. 2 5
Dowler, Cameron H. & L. Co. 1 ..... gas
Wendt, Union Gasoline & O. Co. 4 ..... gas
Evans, Union Gasoline & O. Co. 2 ..... gas
Stern Brothers, Valley Run O. & G. Co. 1 ..... gas

HANCOCK COUNTY

Brenneman, Braden & Co. 40 2

DODDRIDGE COUNTY

Patton, Local Co. 1 ..... dry
Maxwell, Phila. Oil Co. 1 ..... dry
Smith, Phila Oil Co. 3 10
Dotson, Phila. Oil Co. 3 2
Cain, Frank Finley 1 ..... gas
Montgomery, Lucas & Co. 1 2

RITCHIE COUNTY

Freecl, Pgh. & W. Va. Gas Co. 1 ..... gas
Webb hrs., Deem & Co. 1 ..... dry
Cunningham, G. L. Cabot 1 ..... gas
Bradley, Hope C. & R. Co. 7 5

GILMER COUNTY

Craddock-Hardman, Maloney & Co. 1 .. 10
Riddle Brothers, McCall Drilling Co. 7 gas

CLAY COUNTY

Kyle, So. P. O. Co. 16 5

BRAXTON COUNTY

Bourn, Phila. O. & G. Co. 3 ..... gas

WOOD COUNTY

Hale, Chenonworth & Co. 1 ..... dry

WOOD COUNTY

Dunham, Dunham & Johnson 2 ..... gas
Smith, Heck Oil Co. 1 ..... dry

PLEASANTS COUNTY

Stauton, Dinsmoor & Co. 13 ..... dry

ROANE COUNTY

Parsons, So. P. O. Co. 1 ..... gas
Enoch heirs, Heck Oil Co. 8 5
Enoch heirs, Heck Oil Co. 9 75
Watkins, Heck Oil Co. 2 10
H. F. Enochs, Hope C. & R. Co. 5 25
Vandal, Hope C. & R. Co. 2 2
Hall, U. F. G. Co. 2 ..... gas
Harless, U. F. G. Co. 1 ..... gas
Epling, Weekley & Co. 1 ..... gas

CALHOUN COUNTY

Haught, So. P. O. Co. 6 18
Maze, Dalley & Co. 1 ..... dry
Bennett heirs, W. H. Bickel 1 ..... gas
Holbert, Chemical Oil Co. 1 ..... dry
Lowden, A. H. Jackson 1 ..... dry
Hamilton, F. F. McIntosh 1 ..... gas
Stump heirs, L. P. Bickel 10 10
Poling, C. B. Lewis 1 15

BRAXTON COUNTY

Bourn, Phila. O. & G. Co. 3 ..... gas

JACKSON COUNTY

Starr, Starr & Co. 1 ..... dry
McCarty, So. P. O. Co. 12 10
Delaney, Field Gas Corp. 3 5
Streets, Sheppard & Co. 1 ..... dry

LINCOLN COUNTY

Lambert, Woodall Gas Co. 2 ..... gas
Adkins, Woodall Gas Co. 1 ..... gas

BOONE COUNTY

Williams Coal Co., Pure Oil Co. 249 .. 15
Williams Coal Co., Pure Oil Co. 250 .. 15
Huntington Dev. Co., G. L. Cabot 35 .. gas
Sunday Creek C. Co., U. F. G. Co. 3981 gas
Sunday Creek C. Co., U. F. G. Co. 4054 gas
Cannelton C. Co., Cannelton Gas Co. 3.. gas

WAYNE COUNTY

Jackson, Meabon & Huffman 1 2

Wells completed 64
Production 262
Dry 13
Gas 28

SOUTHWEST PENNSYLVANIA
WELLS COMPLETED
WASHINGTON COUNTY

Lewis, Wasco Fuel Oil Co. 4 3
Clark heirs, Duqueane Gas Corp. 1 .... gas

ALLEGHENY COUNTY

Edgewater S. Co., Edgewater S. Co. 4.. gas
Woodings F. & T. Co., Woodings F. & T. Co. 1 ..... gas
Pleafer heirs, M. M. Walley 1 ..... dry
Worst, Worst & Co. 1 ..... gas
Shorr, Leader Oil Co. 1 ..... dry

BEAVER COUNTY

Fiske & Co., Fiske & Co. 1 15
Fiske & Co., Fiske & Co. 2 ..... gas
Cross, Clearwater Torpedo Co. 1 ..... dry
James, E. A. Bream 2 3

BUTLER COUNTY

McFarlan, Phillips G. & O. Co. 5 10
Figler, Phillips G. & O. Co. 3 5

GREENE COUNTY

Morris, Peoples Gas Co. 2 ..... dry

Cowell, Equitable Gas Co. 1 ..... gas
Hatfield, Equitable Gas Co. 1 ..... gas
Barb, J. L. Gerard 4 1
Chambers, Mfrs. L. & H. Co. 1 ..... gas

Wells completed 18
Production 37
Dry 3
Gas 8

SOUTHEAST OHIO

WELLS COMPLETED

MONROE COUNTY

Marsh, Gerber & Co. 1 8
Martin, Christy & Co. 1 2
Hupp, Wickens & Co. 6 ..... dry
Johnson, Preston Oil Co. 2 ..... dry
Williams, Shaffer & Co. 11 ..... dry
McConnell, Gumm & Co. 1 5
Bowin, Parks & Co. 2 ..... dry
Bode, Timlin & Co. 1 ..... dry
Smith, Lucas & Co b 1 5
Hines, Shay, McMullin & Co. 1 5
Fogle, Silver Crown Oil Co. 2 2

PERRY COUNTY

Longstreth, Allegheny Oil Co. 16 1
Hensy, Sturm & Co. 1 1
Spohn, Miller O. & G. Co. 1 ..... gas
Helser, Preston Oil Co. 1 ..... dry
Browning, Gas Producing Co. 1 ..... dry
McCoy, Crowley, Carr & Co. 3 80
Ransbottom, Cline & Co. 6 55
State of Ohio Brick Co., Mauler & Co. 4 130
Eastern Hocking C. Co., Kachelmacher estate 3 90
Fundenburg, School & Co. 1 20
Doyle, Snyder & Co. 1 80
Melick Brothers, Atha Oil Co. 15 30

HOCKING COUNTY

Goodwin, Gordon Oil Co. 2 35
Sunday Creek C. Co., Preston Oil Co. 1,189 20

GUERNSEY COUNTY

Stocker, Ohio Fuel Gas Co. 3 15
Alloway, Ohio Fuel Gas Co. 4 15
Fowler, The Kemrow Co. 2 60

MUSKINGUM COUNTY

Walworth, Atha Oil Co. 1 ..... gas
Robinson, Wittmer O. & G. Properties 1 ..... dry
Chaplin, Wittmer O. & G. Properties 2. ..... gas
McCurdy, Ohio Fuel Gas Co. 1 ..... dry
Sutter, Ohio Fuel Gas Co. 1 ..... gas
Hardy, McClure & Co. 1 ..... gas
Sidle, Hopewell Fuel Gas Co. 2 190
Burrier, Preston Oil Co. 1 60
Vernon, Hope C. & R. Co. 5 20
Hardy, The Wehrle Co. 1 ..... gas

TUSCARAWAS COUNTY

Meek, Gordon Oil Co. 1 ..... gas
Asher, Capital Drilling Co. 1 70
Smetts, Gas Producing Co. 3 ..... gas
Meek, Jewell & Co. 1 ..... gas
Ripley, Gordon Oil Co. 1 10
Ripley, Gordon Oil Co. 2 ..... gas
Larneck, Gordon Oil Co. 2 ..... gas

HOLMES COUNTY

McFadden, Ohio Fuel Gas Co. 1 ..... gas
Finley, East Ohio Gas Co. 2 15
Sterling, East Ohio Gas Co. 4 30
Uhl, Ohio Fuel Gas Co. 2 ..... dry

ASHLAND COUNTY

Smith, G. L. O. Co. 6 ..... gas
Smith, G. L. O. Co. 7 6
Wolf, G. L. O. Co. 1 6
Mosher, Smith & Co. 2 ..... dry

LICKING COUNTY

VanWinkle, McClay & Co. 2 51
Hankey, Emerald Pet. Co. 2 6
Babcock, Emerald Pet. Co. 1 65
Rine, Emerald Pet. Co. 3 50
Davidson, Preston Oil Co. 3 160
Holman heirs, Pure Oil Co. 2 ..... gas
Priest, Pure Oil Co. 4 30
Felner, The E. H. Everett Co. 1 15
Gutridge, Patton & Co. 5 5

COSHOCTON COUNTY

Scholes, E. O. P. & R. Co. 4 2

VINTON COUNTY

Clark, Powers Oil Co. 5 ..... dry
Moore, Johnson & Co. 1 2
Stout, Farmer & Co. 1 1
Clark, Farmer & Co. 1 2
Cooley, Bowser & Co. 1 ..... dry
Knowlton, Letonia O. & G. Co. 1 8

ATHENS COUNTY

Bean, Mosher & Co. 6 1

NOBLE COUNTY

Webber, Local Parties 1 1

MORGAN COUNTY

Bush, Pure Oil Co. 8 5

MEIGS COUNTY

Carnahan, Twenty-Five Assn., Inc., 18. 1
Carnahan, Twenty-Five Assn., Inc., 19. 4
Easterday, Preston Oil Co. 7 5
Krider, Palmer & Co. 3 5

WASHINGTON COUNTY

Ward, Schramm & Co. 16 2

JEFFERSON COUNTY

Becker, Becker & Co. 5 12

Wells completed 79
Production 1499
Dry 13
Gas 15

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Clark	0	0	0	0	1	1	2
Cumberland	0	0	0	0	1	0	1
Crawford	5	100	1	0	1	4	5
Lawrence	2	220	0	0	0	3	3
Wabash	5	92	1	0	0	2	2
Clinton	0	0	0	0	0	2	2
Effingham	0	0	0	0	0	1	1
Randolph	0	0	0	0	0	3	3
McDonough	1	0	1	0	0	0	0
Madison	0	-	-	-	-	-	-
Edgar	0	0	0	0	0	1	1
Washington	0	0	0	0	0	1	1
St. Clair	7	250	3	0	0	8	8
Total June	20	662	6	0	3	28	31
Total May	21	337	8	0	3	33	36
Difference	1	325	2	0	0	5	5

WELLS COMPLETED

CRAWFORD COUNTY

Oblong—J. V. Apple, Niagara Oil Corp. 11 5
Prairie—S. D. Akeman, J. W. Lindley, trustee, 1 25
S. D. Akeman No. 2, J. W. Lindley, trustee, 1 20
Am. Akeman, O. R. Oil & Gas 6 50
Robinson—C. S. Jones, Warner-Caldwell Oil 15 (pressure) ..... dry

Wells completed 5
Production 100
Dry 1

LAWRENCE COUNTY

Dennison—A. B. Buchanan, The Ohio O.I 21 140
Louis F. Gould, The Ohio Oil 2 .... abd
Harriett Leighty, The Ohio Oil 2 ... abd
J. W. Clark, The Ohio Oil 11, 12, 13. abd
J. E. Dennison, John Phipps 1 ..... abd
William E. Rooins, John Phipps 4, 7. abd
R. J. Gillespie, Blosser & Co. 3 ... dry
Walter Buchanan, Becca Oil 2 80
Petty—Rose B. Shipman, The Ohio Oil 1 abd
Dora A. Hipshire, The Ohio Oil 1 ... abd
A. R. Applegate, The Ohio Oil 23 ... abd
Christy—Lillie Caudle, Big Four Oil & Gas 1 ..... abd
Bridgeport—C. H. Fyffe, International Oil 5, 6 ..... abd

Wells completed 2
Production 220
Dry 1
Abandoned 14

WABASH COUNTY

Wabash—W. J. Shick, The Ohio Oil 4.. 12
Joe Keyser, J. S. Young, Jr., & Co. 13 10
Tracey heirs, Tracey Heirs Oil 5 ... 25
F. M. Leek, Cisil Heirs Oil 1 ..... dry
William Schaffer, Robinson Oil 1 ... 45
W. O. Johnson, Adams Corner Oil 1.. abd

Wells completed 5
Production 92
Dry 1
Abandoned 1

M'DONOUGH COUNTY

Lamoine—William Aleshire, W. T. Cole 1 ..... dry

ST. CLAIR COUNTY

Sugar Loaf—Pauline Eckert, H. & M. Operating 4 20
Pauline Eckert, Hagaman & Walden 2 20
Phil Frye, The Ohio Oil 8 70
Phil Frye, The Ohio Oil 9 140
Harry E. Reynold, E. J. Lee, Jr., & Co. 1 ..... dry
Marissa—William Stewart, Petroleum Enterprise Corp. 1 ..... dry
Arsenal Island—East St. Louis Boat Club, Mitchart & Co. 1 ..... dry

Wells completed 7
Production 250
Dry 3

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Wood	1	0	1	0	0	2	2
Hancock	1	10	0	0	0	4	4
Allen	4	47	0	0	0	1	1
Auglaize	0	0	0	0	0	1	1
Mercer	0	0	0	0	0	1	1
Sandusky	4	0	2	2	0	1	1
Seneca	6	1	3	2	0	6	6
Lucas	1	12	0	0	0	0	0
Ottawa	2	2	0	0	0	1	1
Shelby	0	0	0	0	2	0	2
Crawford	0	0	0	0	0	1	1
Logan	1	0	0	1	0	0	0
Hardin	2	15	0	0	0	10	10
Wyandot	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Henry	0	0	0	0	0	1	1
Total June	22	87	6	5	2	31	33
Total May	22	129	6	8	6	30	36
Difference	0	42	0	3	4	1	3

WELLS COMPLETED

WOOD COUNTY

Montgomery—H. L. Byington, The Ohio Oil 1 ..... abd
J. M. Adams, W. L. Hireleg 1, 2 ... abd
James Caskie, Argue & Co. 1, 2, 3, 4, 5, 6, 7, 8 ..... abd
G. B. Hedge, Dicken & Dicken 1, 2, 3, 4, 5 ..... abd
Plain—William A. Iches, M. B. Chidester 10 ..... dry
Lake—Emil Berndt, Charles F. Zeising & Co. 7 ..... abd
Henry—Jacob Neier, The Ohio Oil 2... abd

Wells completed 1
Dry 1
Abandoned 18

HANCOCK COUNTY

Liberty—C. R. Watson, Bear Tooth Oil 2 10

ALLEN COUNTY

Bath—W. A. Carroll, B. L. Carman & Co. 3 20
C. A. Hoover, C. A. and F. J. Peavey 4 15
Reuben Thut, H. F. Kelley & Co. 1 .. abd
Spencer—H. Metzger, Metzger Brothers 5 10
Perry—Earl D. Brown, Kelley Brothers 1 2

wells completed 4
Production 47
Abandoned 1

SANDUSKY COUNTY

Ballville—E. Whitman, M. R. McPherson & Co. 1 ..... gas
Rice—Fred Gnepper, W. C. Richards & Co. 1 ..... gas
Sandusky—W. Micheals, T. F. O'Brien 1, 2 ..... dry
Scott—M. E. Pember, North Ohio Oil 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ..... abd
Woodville—J. F. Emch, Poole, Stitt & Co. 8, 11, 15, 16, 17, 18, 19, 20, 21.. abd

Wells completed 4
Dry 1
Gas 3
Abandoned 21

AUGLAIZE COUNTY

Moulton—Harry J. Hanold, Lima Trust Co. 1, 2 ..... abd
James Rapp, Lima Trust Co. 1, 2, 3 abd

Abandoned 5

SENECA COUNTY

Jackson—L. P. Dillon, Kansas-Ohio Oil & Gas 5 1
Charles Ash, R. Hutton & Co. 1 .... dry
Seneca—David Zeis, W. C. Parmalee 1. dry
Pleasants—C. E. Dennis, C. L. Messer & Co. 2 ..... gas
Milo Saul, Marvela Oil & Gas 5 ..... gas
Liberty—August Fletchner, August Oil 5 ..... dry

Wells completed 6
Production 1
Dry 3
Gas 2

LUCAS COUNTY

Monclova—Henry Butz, Dillon & Weed 1 12

OTTAWA COUNTY

Harris—A. Schott, Trenton Oil 1 1
G. Damale, Gibsonburg Oil 1 1

Wells completed 2
Production 2

LOGAN COUNTY

Roundhead—Steve Ammons, Belle Center Oil & Gas 1 ..... gas

HARDIN COUNTY

Cessna—Mary Wedertz, The Kemrow Co. 1 5
Elmer Kreitzler, The Kemrow Co. 1 .. 10

Wells completed 2
Production 15

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Adams	1	15	0	0	0	0	0
Jay	1	15	0	0	0	0	0
Gibson	3	0	2	1	0	4	4
Pike	5	175	1	1	0	11	11
Daviess	1	15	0	0	0	2	2
Sullivan	2	66	0	0	2	2	4
Vigo	5	95	2	0	0	2	2
Spencer	2	10	1	0	0	0	3
Perry	2	0	2	0	0	6	6
Warrick	0	0	0	0	0	4	4
Crawford	0	0	0	0	0	1	1
Lagrange	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	1	1
Posey	0	0	0	0	0	2	2
Putnam	0	0	0	0	0	1	1
Morgan	0	0	0	0	1	2	3
Marshall	0	0	0	0	1	1	2
Monroe	2	0	1	1	0	1	1
White	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	1	1
Lawrence	1	0	1	0	0	0	0
Total June	25	391	10	3	4	46	50
Total May	21	266	9	2	3	43	46
Difference	4	125	1	1	1	3	4

WELLS COMPLETED

ADAMS COUNTY

Jefferson—Baker heirs, George S. Lacknett & Co. 2 15

JAY COUNTY

Near Red Key—Oscar Current, Dee Werner 1 15

HUNTINGTON COUNTY

Salamonia—Calvin Perdue, Max Ziegler Bros. (18 wells) ..... abd
Laura A. Slater, Max Ziegler Bros. 1 abd
Frank Malott, Max Ziegler Bros. 3 .. abd

Wells abandoned 22

DELAWARE COUNTY

Albany—L. H. Holloway, Athens Gas Corp. 1, 4, 5, 6, 7, 8 ..... abd

Wells abandoned 6

GIBSON COUNTY

Columbia—George Allen, Shell Pet. 3.. dry
L. W. Gudgell, Texana Oil 1 ..... dry
Washington—Tom Duncan, Mann & Huber 1 ..... gas

Wells completed 3
Dry 2
Gas 1

PIKE COUNTY

Clay—Berkley Hill, Wm. Bell & Co. 1.. 100
Ford & Hill, Mahutska Oil 5 25
Washington—Wm. Hill, Harry Risher 1 50
Frank Hale, C. E. Wommer 1 ..... gas
Logan—C. E. Miller, H. C. Darby & Co. 1 ..... dry
Madison—C. C. Duffy, Murphy Oil 3 .. abd
Sam T. Rumble, Murphy Oil 2 ..... abd

Wells completed 5
Production 175
Dry 1
Gas 1
Abandoned 3

LAWRENCE COUNTY

Near Bartlettsville—Pet. Explth. 1 .... dry

VIGO COUNTY

Prairie Creek—Wm. Riggs No. 2, Siosi Oil Corp. 9 5
Wm. Riggs No. 2, Siosi Oil Corp. 10.. dry
Wm. Riggs No. 1, Siosi Oil Corp. 19 65
Cash Piety, The Ohio Oil 2 25
Sugar Creek—Anna E. Goodman, Siosi Oil Corp. 2 ..... dry

Wells completed 5
Production 95
Dry 2

MONROE COUNTY

Salt Creek—State Life Ins., Pet. Explth. 1 ..... dry
T. W. Peterson, Pet. Explth. 1 ..... gas

Wells completed 2
Dry 1
Gas 1

DAVIESS COUNTY

Veale—Otis Wildman, L. G. Gee & Co. 3 15
National City Bank, L. G. Gee & Co. 1 abd

Wells completed 1
Production 15
Abandoned 1

SULLIVAN COUNTY

Fairbanks—E. E. Williams, Twin Creek Oil 4 60
Turman—C. L. Davis, Chas. W. Scott & Co. 1 6

Wells completed 2
Production 66

SPENCER COUNTY

Clay—M. Spayd, Missouri-Kansas Pipe Line 1 ..... dry
Huff—Lee Carlton, Packard Oil 6 10

Wells completed 2
Production 10
Dry 1

PERRY COUNTY

Anderson—Alfonso Dupoint, The Ohio Oil 1 ..... dry
Near Troy—John Backer, Roger E. Williams 2 ..... dry

Wells completed 2
Dry 2

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Muskegon	3	55	1	0	0	7	7
Isabella	13	2,540	2	0	25	35	60
Midland	1	706	0	0	3	8	11
Kent	0	0	0	0	1	3	4
Ottawa	0	0	0	0	0	2	2
Oceana	0	0	0	0	0	5	5
Mason	0	0	0	0	0	4	4
Manistee	1	0	0	1	0	1	1
Lake	0	0	0	0	0	2	2
Newaygo	0	0	0	0	2	10	12
Cass	0	0	0	0	1	1	2
Tuscola	0	0	0	0	0	1	1
Clare	1	0	1	0	2	3	5
Montcalm	0	0	0	0	1	0	1
Alpena	0	0	0	0	0	1	1
Saginaw	1	20	0	0	0	1	1
Emmett	0	0	0	0	0	1	1
Eaton	0	0	0	0	1	1	2
Kalkaska	0	0	0	0	1	1	2
Branch	0	0	0	0	0	1	1
Iosco	0	0	0	0	2	0	2
Missaukee	0	0	0	0	1	0	1
Delta	0	0	0	0	0	1	1
Montmorency	0	0	0	0	1	0	1
Monroe	0	0	0	0	1	3	4
Lenawee	0	0	0	0	0	1	1
Gratoit	0	0	0	0	4	6	10
Shiawasse	0	0	0	0	0	1	1
Livingston	0	0	0	0	1	1	2
Jackson	0	0	0	0	1	0	1
Kalamazoo	0	0	0	0	0	1	1
Presque Isle	0	0	0	0	1	0	1
Sanilac	0	0	0	0	3	0	3
Allegan	0	0	0	0	2	2	4
Calhoun	0	0	0	0	0	1	1
Van Buren	0	0	0	0	2	0	2
Washtenaw	0	0	0	0	0	1	1
Sheboygan	0	0	0	0	1	0	1
Osceola	0	0	0	0	1	0	1
Mecosta	0	0	0	0	0	2	2
Total June	20	3,321	4	1	58	108	166
Total May	27	1,020	16	2	53	115	168
Difference	7	2,301	12	1	5	7	2

WELLS COMPLETED

MUSKEGON COUNTY

Muskegon—L. P. Haight, Lima Oil Corp. 7 50
Timmer, Ruby A. Edwards 1 ..... dry
Laketon—John Thompson, Johnson Oil & Refg. 10 ..... abd
W. H. Fenner, William H. Wilson, trustee, 1 ..... abd
Montague—J. A. Quinlan, White River Oil Corp. 1 5

Wells completed 3
Production 55
Dry 1
Abandoned 2

ISABELLA COUNTY

Chippewa—Keeler-Brown, Sias Oil 2... 85
Keeler-Brown, Sias Oil 3 190
James Brown, Sias Oil A-3 275
O. F. Adams, Sias Oil 1 50
Lewis Thompson, The Pure Oil 3 100
Reems, The Pure Oil A-6 ..... dry
Nora Davis, Dixie Oil 1 600
Nora Davis, Dixie Oil 3 200
Joslyn, Chippewa Oil & Gas 10 40
J. Coon, Story Oil 7 75
E. Grubb, E. Brown Oil 1 225
Denver—P. J. Marthey, New York Petroleum Royalty 1 700
Vernon—McManama, Uhl-Sarver-Rayner 1 ..... dry

Wells completed 13
Production 2540
Dry 2

MIDLAND COUNTY

Greendale—Fred Sias, The Pure Oil 3. 706

MANISTEE COUNTY

Filer—Sands Lumber Co., Swastika Oil & Gas 1 ..... gas

CLARE COUNTY

Grant—Mary Hubel, Clare Development 1 ..... dry

SAGINAW COUNTY

Saginaw—John Egerer, Saginaw Prospecting 77 20